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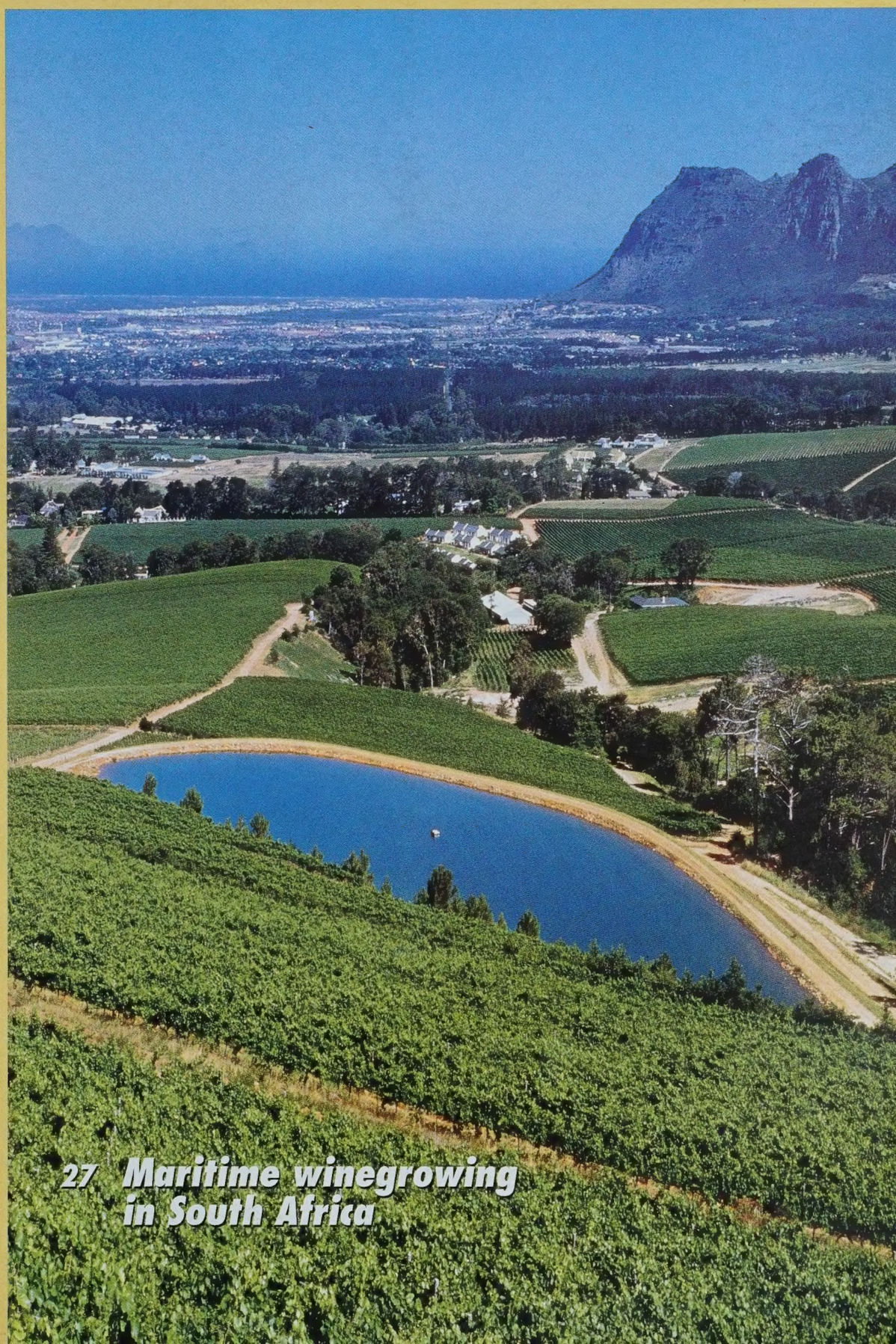

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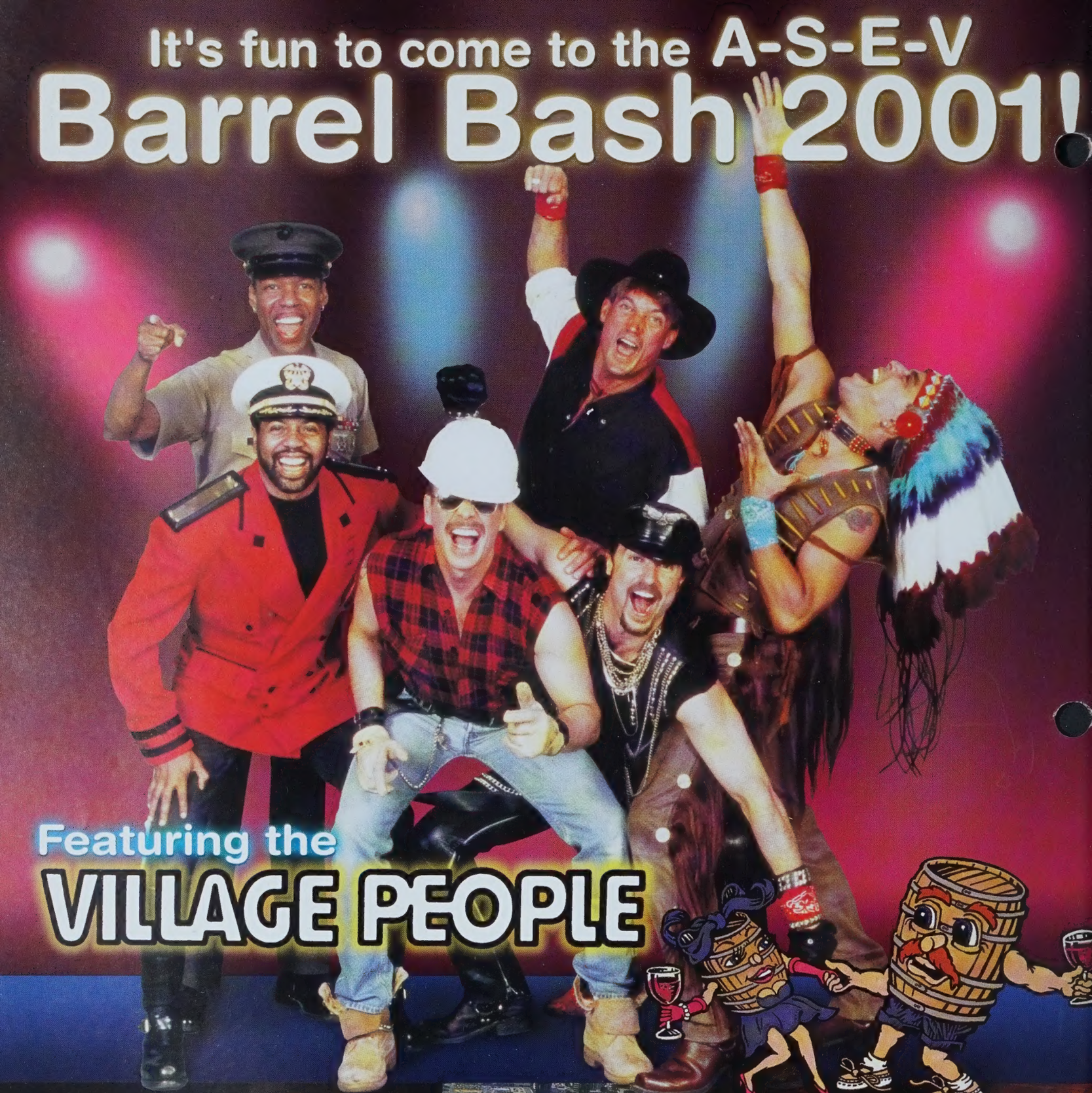

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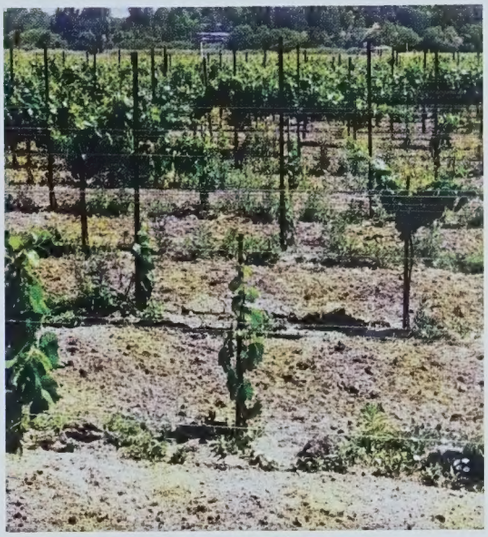

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COMBATING ANTI-INDUSTRY ACTIVISM

Being a good neighbor in the community

BY Jack Heeger

Winegrape growers and wine producers face a myriad of problems each day — most of them nature-related. Whether it's a potential attack by the glassy-winged sharpshooter, an early rainfall before harvest or a late freeze after bud break, growers have learned generally how to cope.

In recent years, however, new problems have arisen in the form of neighbors concerned about hillside erosion, cutting of oak trees, sulfur dusting, insecticide spraying, increased traffic around tasting rooms, and noisy special events. In many cases, citizens have gone to court to stop or force an action by a winery or grower. Activists in Sonoma County, for example, have blocked attempts to spray pesticides to stop the potentially disastrous glassy-winged sharpshooter.

Another example of the trouble growers can face from wary neighbors is a recent lawsuit filed by the Sierra Club in Napa County charging three growers with violations of a hillside ordinance that requires them to file an erosion control plan (ECP). A companion lawsuit against Napa County charged that approving ECPs was a violation of the California Environmental Quality Act. Dozens of growers had ECPs pending, but only three were singled out, because, in the words of one, "...each one of the three vineyards has a neighbor who is a consistent critic of any development going on in the hillsides."

The three growers eventually settled by agreeing to pay the Sierra Club's cost of the suit, which was estimated at $135,000, and one grower, Jayson Pahlmeyer, placed 57 acres, including 20 plantable acres, into a conservation easement that will prevent any future hillside development on the property.

Cosentino Winery and its Napa Valley neighbor, Mustard's, one of Napa County's most famous restaurants, face the wrath of neighbors who claim the two firms are violating wastewater treatment regulations. Both are facing potential fines of up to $10,000 per day if the complaints are not addressed. Two years ago they were even threatened with loss of their business use permits.

Situations like these are becoming so commonplace that many in the wine industry are taking the offensive by developing community relations programs aimed at mitigating the effect of these problems and even heading them off entirely. Regional winegrowing associations, county organizations, and individual wineries have undertaken efforts to bond more closely with the residents of their areas.

Wine Vision, the strategic planning group that is formulating a long-range plan for the industry, suggests that the wine industry should become a leader in sustainable practices: environmentally, socially, and economically. It is significant that "environmentally" is listed first, since so many neighbor complaints involve environmental concerns.

Noting the importance of these programs, organizers of the Unified Wine & Grape Symposium, held in Sacramento, CA, in January, sponsored a panel discussion with representatives of industry groups who share concerns about the wine industry's public image. Introducing the panel, Karen Ross, president of the California Association of Wine Growers, said, "In an age of ballot box initiatives and activism that can rapidly change the business atmosphere, we need neighbors who understand and appreciate our role in the community."

Paso Robles Vintners & Growers

In the Central Coast area, the Paso Robles Vintners & Growers Association (PRVGA) has conducted a multi-pronged program to connect its members with the community, according to July Ackerman, PRVGA chief executive officer. It starts with a media relations effort directed at promoting positive stories and balancing or effectively managing negative ones.

In December 2000, the PRVGA took community leaders on a tour to give them a firsthand look at controversial vineyard and winery developments.

On an ongoing basis, a volunteer mediator fields complaints from neighbors, so situations can perhaps be resolved before the neighbors contact the media or file a formal complaint.

Ackerman says PRVGA's community outreach includes helping non-profit organizations in the area find qualified wine industry members to serve on their boards of directors and committees.

Over the past 18 months, the PRVGA has participated in putting together a land-use ordinance creating rules for wineries, tasting rooms, events, bed and breakfasts, and restaurants. Ackerman has served on a task force with leaders from virtually every major environmental group in the county, as well as ag department staff and commissioners and planning department staff.

Lodi Woodbridge Winegrape Commission

Similar activities are carried out by the Lodi Woodbridge Winegrape Commission (LWWC), reports Mark Chandler, executive director. A "United We Stand" strategy involves regular formal joint meetings between the LWWC board of directors and the Lodi City

Council, "usually over lunch or dinner where people can unwind — and a little wine doesn't hurt, either," Chandler says. "The meeting allows mutual exchange of important ideas. In our case, economic development is always high on the list, and for us that means wine tourism."

The interchange began in 1994, leading to establishment of the Lodi Conference & Visitors Bureau in 1998, with the LWWC sharing one-third of the $200,000 budget cost with the city.

Another program Chandler calls "dispersing your emissaries" involves speaking engagements by LWWC members at local area service clubs on such subjects as the sustainable farming program, industry updates, and the new Discover Lodi Wine & Visitor Center. He recommends that his staff join the clubs as well, because, "You never know — you may be sitting across from your next city council member, county supervisor, assemblyman, or senator."

LWWC is proactive with news media, sponsoring farm tours, inviting media to field days and special awards, such as presentation of the organization's Integrity Award. "The strategy is to become a credible source so the media will check in with you before they run a negative story they picked up off the newswire," explains Chandler. "Even when we can't speak on the record, we are free with background information that makes a better story for them and also makes them more credible."

Livermore Valley

In the Livermore Valley, home development continues at what many call an alarming rate because of spillover pressures caused by the San Francisco Bay Area housing shortage. Livermore Valley grapegrowers there have taken steps to assure that agricultural land will be preserved, according to Phil Wente, executive vice president of Wente Brothers.

Wente describes a strategic planning process that involves all elements of the community, including county supervisors, the county planning department, and the cities of Pleasanton and Livermore. Added to this were other stakeholders like the agriculturally oriented Friends of Growers, the Sierra Club, other environmental organizations and some land owners not involved with vineyards. "we wanted to try to get anyone and everyone," says Wente. The process began in 1986.

It took eight years to adopt the unique land use plan, which acknowledges the value of agricultural land to the local community. It envisions vineyards as an effective way to keep land available for agriculture, and, at the same time, make a contribution to the quality of life for Livermore Valley residents. In the south Livermore area, one acre of land is set aside in an easement for each new unit built, and another acre is set aside for each acre of

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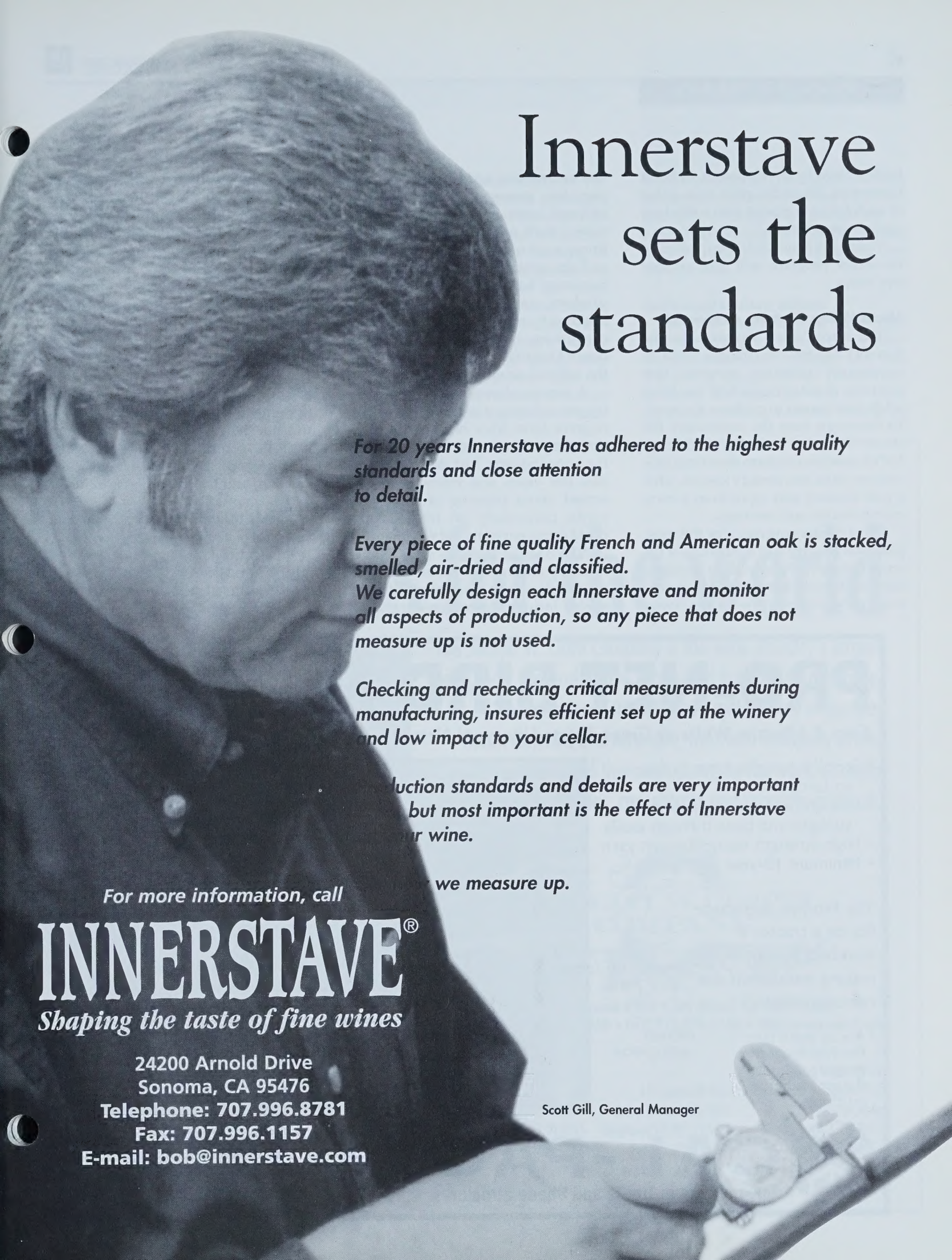

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Scott Gill, General Manager

land covered by development. In north Livermore, 2% of the gross sales value of each home is placed into a fund for agriculture projects.

Wente estimates that completion of the entire program will take another five years.

Napa Valley Vintners Association

The Napa Valley Vintners Association (NVVA) feels so strongly about its community relations program that executive director Linda Reiff has hired a full-time person to continue the work. To determine how the community felt about the wine industry, Reiff says NVVA combined information from four sources: what was already known, what a poll showed, and input from a community mailer and meetings.

Local media coverage, for the most part, was positive and supportive of the wine industry. "Nearly all of the local clips on the industry in the past year were good except in two areas: farmworker housing and coverage of those very few growers and vintners who violated some environmental regulations," Reiff notes. Some vintners felt things were okay because "people love us," she joked, but she says these vintners may have "misunderstood wine drinkers' consumer affection for local affection," meaning that just because consumers love Napa Valley wine doesn't translate into local approval of the vintners or what they do.

A survey showed that one of the biggest concerns was lack of affordable migrant farm labor housing. In addition, the poll indicated that support for the wine industry had declined in the past few years, and voters were concerned about planting of new vineyards, particularly on hillsides that could cause environmental damage.

NVVA sent a mailer to 30,000 homes with key information about the industry and its role in the community. The mailer included a response card. Of those who responded with comments, more were negative than positive. "While it is certainly normal for survey respondents to complain more readily than they praise, we noted several common threads in the replies."

Most negative remarks addressed environmental matters, such as vineyard expansion, hillside planting, removal of trees and vegetation, watershed issues, water (groundwater and wells), erosion and pesticide use. Lack of housing for farm workers was also prominently mentioned. On the positive side, however, many did recognize NVVA's community and charitable giving (proceeds from the annual Wine Auction) and the value of the industry to the community.

Meanwhile, the NVVA had formed a task force of vintners and staff to conduct 100 one-on-one meetings with community opinion leaders. "These were people we needed to talk to — from elected officials to school principals to ministers to

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environmental leaders," Reiff explains. "It gave us an opportunity to listen, build relationships and possibly get across some key messages."

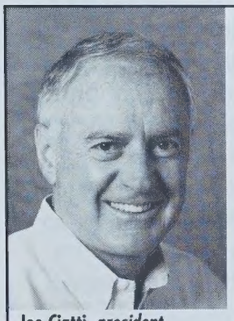
NVVA also published a brochure outlining its message of sensitivity to community concerns, then gave copies to vintners to include with employee pay checks so employees could pass along the information whenever they talked with friends or neighbors.

The organization regularly prepares op-ed pieces for local newspapers, and also instituted a "Napa Neighbor Program" to give local residents VIP treatment, which includes privileges such as free tasting and discounts on purchases at many member wineries,

Because farm worker housing is such a vital issue, NVVA is sponsoring legislation that will allow the Napa County wine industry to establish an assessment district which will tax vineyards to pay for migrant farm worker housing programs. The group also plans to contribute another $350,000 toward farm worker housing from auction funds. NVVA is searching for a site for an additional, permanent 60-bed facility to be operated by Napa County, and it is working with the county to construct high-quality tents that can be used as temporary housing for the 2001 harvest.

Individual winery efforts

Industry organizations aren't the only ones trying to be good community citizens; individual wineries are, too. Topolos at Russian River (Forestville) sponsors seminars on how to farm organically, hosting between 20 and 40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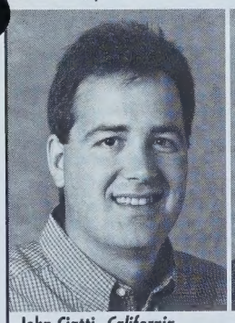
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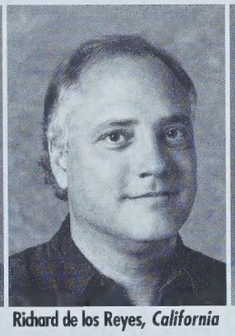
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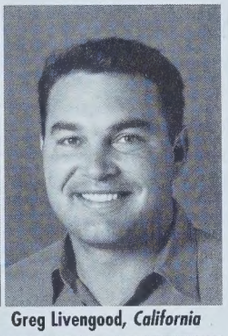
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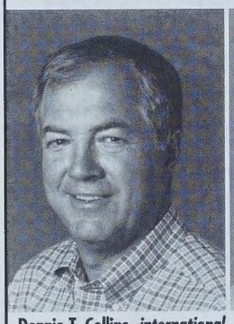
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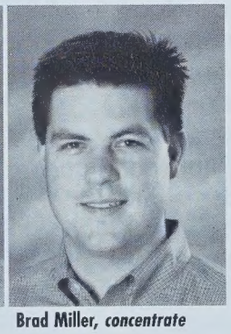
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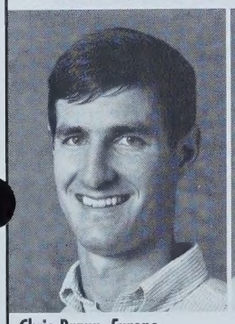
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winegrape growers and members of the general public at a time. Topolos has "adopted" a local area school as its recipient of glass, cardboard, and other recyclable materials, which owner Michael Topolos says the school then sells to raise funds.

Many wineries sponsor events that benefit charities. They frequently provide wine for auctions and charitable tastings. St. Clement Vineyards (St. Helena) conducts six events each year at its tasting room, donating the receipts to local non-profit organizations. Hospitality manager Jennifer Lamb reports that since the program began in 1998, it has raised more than $26,000.

Hop Kiln Winery in Healdsburg has been the site of numerous environmental fundraisers, most of them tied to restoration of the Russian River. Owner Martin Griffin believes "a couple of million dollars" has been raised for environmental causes at events held over the last 30 years.

In Sonoma County, Kendall-Jackson (K-J) Winery has partnered with Santa Rosa High School to create the High School Farm, which K-J says will "train the vineyard and winery managers" in coming years. Students planted seven acres of Chardonnay and Sauvignon Blanc vines this spring.

K-J works with other schools as well: A portion of its vineyards in Santa Barbara County is devoted to enology, worked by viticulture students at Allen Hancock College in Santa Maria. K-J sponsors a course, "The History and Culture of Wine," at California State Polytechnic University in San Luis Obispo and works with students and teachers at El Molino High School in Sonoma County to farm a vineyard in the Russian River area. Students will be involved in a "shadow program," closely following and monitoring the activities of K-J employees.

Faced with attacks by environmentalists in Santa Barbara County for removing trees to plant acreage a few years ago, K-J responded by collecting acorns from trees already on the property to develop seedlings. These were placed on drip irrigation systems to receive special care and attention which, K-J says, when planted will actually increase the number of trees on the property to a number much higher than what was there before.

Recently, Kendall-Jackson joined with the California Oak Foundation to provide every legislator and support staff member a descriptive and detailed book on oaks in California, along with a poster identifying oak species. The goal was to continue educating the legislature so funds for restoration and research continue to flow for California oaks.

Conclusion

Do all these public relations efforts work? The Sierra Business Council, formed in 1964 "to secure the economic and environmental health of the Sierra region for this and future generations," seems to think so. It has brought together more than 600 businesses to work with environmental groups.

A major project of the Sierra Business Council was production of a "Planning for Prosperity" publication that helped members, civic leaders, and elected officials understand how they can expand communities without compromising either the economic or environmental integrity of the area.

"Instead of meeting each other in court or at yet another angry session before the Board of Supervisors, stakeholders with divergent interests are starting to meet each other around the table to hammer out mutually agreeable solutions," says Lucy Blake, president of the council.

Applying this to the wine industry, Blake told the Unified Symposium audience, "As much as you would like to believe otherwise, the rub between operating your businesses and living with your neighbors is only likely to get worse. Are you going to grapple with these issues in a serious way and develop solutions that will work for your businesses and your neighbors over the long haul?"

Blake adds, "You have the talent to forthrightly address public concerns about water quality, habitat loss, and over-development. And if you do so in a way that engages your neighbors — both boosters and naysayers — you will have built a foundation of trust and good will that will continue to pay dividends for years to come." ■

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Improving Sulfur Management

BY Joe Browde[1] and Cliff Ohmart[2]
California Winegrape Pest Management Alliance

Winegrowers have "dusted off" their sulfur dusters and are into another season of battling powdery mildew. Most growers know that the Department of Pesticide Regulation (DPR) has a watchful eye on dusting sulfur, primarily due to public complaints of drift.

Because of sulfur's importance for mildew management programs across the state, we will review the issues with drift in sulfur application and suggest best management practices.

Sulfur is a natural element used safely for centuries to control plant pathogens and mites. As an active ingredient, sulfur is the leading pesticide used in California agriculture. It is a very important and effective tool for managing powdery mildew — one of the major diseases affecting winegrapes in California and throughout the world. Uncontrolled mildew seriously reduces both winegrape yields and quality.

Human exposure to sulfur can cause eye irritation, breathing difficulty, and skin irritation — especially in sensitive individuals. But, compared to most other pesticides, it has minimal effects on humans and the environment. In fact, sulfur use is approved for organic farming.

So, what is the concern?

The issue is clear. A number of high profile reports of sulfur drift have occurred over the last few years. Public complaints were the source for most of these reports. Consequently, DPR conducted a survey of all counties during June 1999. Results indicated that 34 drift incident reports involved sulfur in both 1997 and 1998. For 1999, 18 incidents involving sulfur drift already were reported by June.

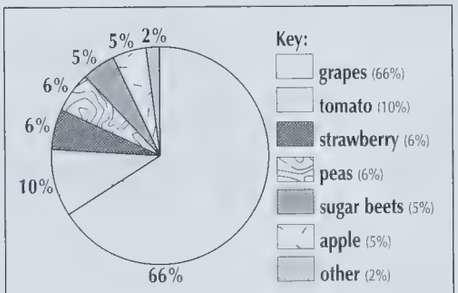

Figure 1:
Sulfur Drift Incidents by Crop (1997–99)

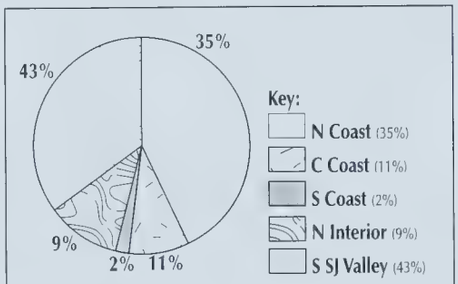

Figure 2: Sulfur Drift Incidents for Grapes by Region (1997–99)

About two-thirds of the reports cited grapes as the target source (Figure 1), distributed throughout all winegrape regions (Figure 2). Moreover, approximately 80% of reports for grapes were attributed to dust applications (data not shown). Incidents included dust drifting from its intended crop target onto surrounding structures, such as neighboring residences, schools, and places of business. Dust drift onto workers in surrounding fields and moving vehicles was also reported.

Dusting sulfur constitutes the foundation for powdery mildew control in grapes throughout California. In fact, a majority of winegrape acres are treated with dusting sulfur each year — many treated repeatedly.

Why have there been more complaints recently? The key factor seems to be the increase in agricultural/urban interfaces.

Many urbanites do not fully appreciate agriculture and the need for judicious, tactical intervention for managing pests. Unfortunately, too many regard all pesticides (including sulfur) as bad and equally toxic. Because of its extensive use, visibility, and susceptibility to offsite movement by wind, dusting sulfur must be managed with particular care to prevent drift and complaints.

Collaborative efforts to improve sulfur management

According to the law, applicators must use pesticides in a manner that minimizes the potential for drift to nontarget areas. Due to increasing reports of sulfur drift, DPR put sulfur registrants "on notice" in November 1999. Regulators gave them an opportunity to reduce complaints before imposing specific legal restrictions related to sulfur and its uses.

Sulfur registrants formed the Sulfur Task Force (STF), which developed a supplemental label for dusting sulfur. STF has worked with the Coalition for Urban/Rural Environmental Stewardship (CURES; Parry Klassen, executive director) to develop a sulfur stewardship program. The program includes production of stewardship manuals and implementation of a grower outreach program.

The California Winegrape Pest Management Alliance (PMA) is complementing and expanding the STF/CURES effort through additional education of winegrowers and the general public. PMA is a grower-driven collaboration with DPR to promote reduced-risk pest management.

The California Association of Winegrape Growers (CAWG) provides organizational leadership, and a steering committee comprised of representatives from regional and statewide

winegrape organizations, helps guide efforts. Funding is provided by a grant from DPR. Karen Ross, president of CAWG, is the principal investigator.

The PMA strongly advocates educating the public about the low toxicity of sulfur, the rationale for mildew management, and the genuine concern that farmers have for the welfare of their neighbors, employees, and the environment.

But, the farming community must do its part by using best management practices for application of sulfur (and other pesticides) to minimize the potential for drift from treated vineyards, especially to surrounding "sensitive areas."

PMA is holding field days across the state as venues for grower-to-grower transfer of practical techniques and systems for managing sulfur near sensitive areas.

This education will benefit the winegrape community and the general public, as sulfur management practices are improved, drift incidents are reduced, farmer-community relationships are enhanced, and sulfur and its uses are sustained. The intent is to greatly reduce or eliminate public complaints about sulfur drift.

What are sensitive areas?

Sensitive areas are locations surrounding a vineyard where people, organisms, or structures could be exposed to pesticides. Based on drift incidents with sulfur, these areas include schools, bus stops, busy roadways, residences, or other areas of human activity.

Sulfur sensitive areas also can include nearby crops (such as pears) and waterways. By careful evaluation, it should be easy to identify sulfur-sensitive areas near vineyards. Growers should consider contacting their county agricultural commissioner's office to help determine specific local areas.

How to reduce the potential for drift and avoid incidents?

Growers are integrating a number of practices into site-specific programs for effectively managing sulfur near sensitive areas. Growers can review the list below and work with applicators to develop a plan incorporating those practices appropriate for their vineyard and circumstances. It is critical that applicators fully understand the plan as it relates to the geography of their vineyards and surrounding areas. Many of these tactics also are described in the CURES publication *Sulfur, Best Application Practices.*

Best management practices

- *Being a good neighbor.* Sulfur stewardship includes being aware of the concerns of neighbors, and local communities. Consider a policy of discussing vineyard actions with neighbors, speaking with community organizations about the importance of sulfur as a relatively benign crop protection tool, and forming a regional team of growers to serve as the first contact with the public for negotiations and troubleshooting. These actions promote mutual understanding and better relations, thus decreasing the probability of complaints.

- *Canopy management.* Use trellis systems and canopy thinning techniques (leaf pulling, shoot thinning, cane cutting) that open canopies to recommended levels. Besides benefitting fruit quality, a properly opened canopy provides conditions less conducive to mildew and other diseases, potentially lowering sulfur rates and reducing applications for achieving adequate coverage.

- *Monitoring mildew development.* Use the powdery mildew index as a tool for optimally timing and possibly reducing the frequency of fungicide applications (including sulfur).

- *Establishing buffers.* Establish reasonable buffer zones to prevent drift onto sensitive areas and public exposure to applications. Buffer distances vary with weather conditions, formulation (dust/wettable), application method (ground/air), presence of barriers (*e.g.*, trees), and characteristics of sensitive areas. If buffers determined for dust application overlap some border vine rows, apply separate fungicide sprays (less prone to drift) to these rows or dust border vine rows during conditions when buffers can be reduced.

- *Dealing with extra-sensitive areas.* Consider applying wettable sulfur or other low-risk fungicide sprays to vineyard portions or entire vineyards near extremely sensitive areas.

- *Selecting rates.* Adjust application rates of sulfur or other fungicides to the lowest effective rate according to vine growth and development. Higher label rates may not be required early in the season to achieve adequate coverage. Use of lower rates also can decrease risks of pesticide drift, particularly for dusting sulfur.

- *Equipment operation.* Maintain, calibrate, and select application equipment to ensure accurate delivery of the intended rate. For dust, be extra cautious of drift during row turns, and reduce RPM at row ends or shut off dusting equipment if possible.

- *Weather monitoring.* Monitor weather conditions before and during applications. No sulfur applications can be made when winds exceed 10 miles per hour, but consider using an even lower threshold. Avoid applications when winds are blowing toward sensitive areas and during temperature inversions.

- *Timing applications.* Decrease public visibility and the potential for complaints by making applications during periods of least human activity (*e.g.*, at night, weekends). Develop a sequence for application that attracts the least attention. For nighttime applications, minimize "noise" complaints by treating rows closest to residential areas first.

- *Resistance management.* Although mildew resistance to sulfur has never been found, consider rotations with other fungicides as a preventive measure against resistance and potential sulfur drift.

It is important for winegrowers to be proactive in resolving important environmental and social issues. Addressing the issue of public complaints about sulfur drift is no exception. Growers must develop and apply best management programs for sulfur to prevent further regulation and to retain sulfur as a viable tool for agricultural production. ■

[1] Joe Browde is Project Coordinator, California Winegrape Pest Management Alliance

[2] Cliff Ohmart is Research/IPM Director, Lodi-Woodbridge Winegrape Commission

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Figure 1. (left) Scattered distribution of sick vines disputes any stress and/or mismanagement explanation. (Photos by Mike Porter.)

INTERNATIONAL PERSPECTIVE ON YOUNG VINE DECLINE

BY Mike Porter

Many thousands of young vines in vineyards in the North Coast of California have performed poorly over the past decade. Discussions of this problem with pathologists from around the world indicate that, although much research remains to be done and opinions differ on a number of details, a consensus has recently emerged regarding the nature of the beast.

Denial

It has been difficult for many people to accept that young vine decline is a serious problem. This is understandable, following as closely as it does on the heels of the AXR-1 debacle. But there *is* a worldwide disease problem. In fact, it is a complex of different fungal diseases infecting American rootstocks, including *Phaeoacremonium, Cylindrocarpon,* and especially *Phaeomoniella.*

As noted by viticultural consultant, Dr. Richard Smart, "Most growers and professionals enter into denial, which is to be expected. Anyone unfamiliar with this attitude should read George Ordish's account of the phylloxera invasion of Europe to see the close parallel that existed about 100 years ago." (1)

Planting day

The fungal diseases mentioned above are often present in rootstocks at the time they are delivered from the nursery. It is highly undesirable to plant these diseased vines. Don't be surprised if vines that should have been rejected do poorly or eventually die.

Sonoma County vineyard owner, Brian Gebhart recalls that, in the 1970s planting boom, demand outstripped supply, and a lot of inferior plant material was delivered to growers. The high loss rates experienced in the 1970s should serve as a lesson today. Growers should be very picky in culling out poor plant material.

Table I shows rootstock, while Table II shows dormant bench grafts picked up on planting day in North Coast vineyards and sent directly to pathology labs at UC Davis and California Department of Food & Agriculture from 1995 through 1998. Please note that some of what was called *Phaeoacremonium* a few years ago has been renamed *Phaeomoniella,* and that these two different fungi were not distinguished at the time.

During the same period, samples were taken from existing vineyards having a great many sick and dying vines. A total of 31 vineyards representing eight rootstock genotypes from five different sources were pervasively infected with *Phaeomoniella, Phaeoacremonium, Cydlindrocarpon,* and a smattering of other fungi.

Figure 2. (above) Six-year-old vineyard removed due to extensive infection with fungal disease.

Table I — Certified virus-free dormant rootstock on planting day

Source	Rootstock	Fungi Cultured
B	101-14	–
B	St. George	–
C	110	–
C	110	Fusarium
C	101-14	–
D	5C	–
D	420A	Phaeo.*
D	1103	Fusarium
D	3309	–
D	101-14	Botrytis
E	110	Fusarium
E	110	Alternaria
E	140	Phaeo.*
E	1103	Gliocladium
E	1103	Alternaria

*was called Phaeoacremonium, now known to include Phaeoacremonium and Phaeomoniella.

While studying grapevine decline in Portugal, Dr. Cecelia Rego *et al* tested 3,340 unplanted vines representing nine different rootstock genotypes.(2) They found that 30% were infected with Cylindrocarpon and 23% infected with *Phaeomoniella*. (The infection rates of *Phaeomoniella* are likely understated; see "false negative" under ***More confusion*** below.)

Rootstock mother vines are widely infected with some of the same fungi listed in Tables I and II. Specifically, *Phaeomoniella, Phaeoacremonium, Cylindrocarpon,* and *Fusarium* have been found in rootstock mother vines and their offspring in California, Europe, South Africa, and New Zealand. Dr. Ian Pascoe reported extensive *Phaeomoniella* infection of rootstock mother vines and stunting, decline and dieback of vines one to 24 years old in Australia.(1)

There may be no apparent foliar symptoms in rootstock mother vines — you must look inside to detect damage. But in vines grafted onto young rootstocks of American parentage, these fungi can be serious pathogens with a wide range of symptoms.

Infection of harvested canes can be both internal and external. That is, some canes have spores in their xylem vessels and pith which remain essentially dormant as long as the tissue is green. After propagation and one year in a nursery plot, the pith and first xylem ring are woody enough for the spores to germinate (personal communication from Dr. Laura Mugnai). More canes (likely *many* more) have abundant spores on the outside, which get in during propagation through a disbudding site or via one of the end cuts.

Note in Tables I and II that some of the fungi, specifically *Cylindrocarpon, Fusarium, Pythium,* and *Botryodiplodia,* are known to live in soil and would more easily be kept out of the vines if the canes were not allowed to drape onto the soil. To prevent this problem, rootstock mother vines should be trellised and shoot positioned, and harvested canes should never come in contact with the soil. In contrast, scien-

Table II — Rootstock of benchgrafts on planting day

Source	Rootstock	Fungi Cultured
A	110	Fusarium
A	110	–
A	101-14	–
B	5C	saprophytes
B	110	Botryodiplodia
B	110	Pythium
B	110	Cylindrocarpon
B	1103	Pythium
B	3309	Phaeo.*
B	3309	Phaeo.*
B	44-53	–
B	44-53	Cylindrocarpon, Fusarium
B	44-53	Cylindrocarpon
B	44-53	Fusarium, Gliocladium, Cylindrocladelia
B	44-53	Pythium
B	101-14	–
B	St. George	saprophytes
B	St. George	Phaeo.*
G	SO4	saprophytes

*was called Phaeoacremonium, now known to include Phaeoacremonium and Phaeomoniella.

Figure 3. Well-callused graft union.

Figure 4. Poorly-callused graft union.

Figure 5. Poorly-callused root base with poor root distribution with hole in center associated with infection.

Figure 6. Cross-section of certified virus-free rootstock with symptoms of internal infection.

tists have not found that *Phaeomoniella* infection can be transmitted through soil or that treating the soil is curative for esca or young vine decline.

At the nursery

The presence of abundant spores of the various pathogenic fungi should be of great concern to both nursery staff and growers. During the process of grapevine production, each rootstock is wounded at both ends when it is removed from the mother vine, disbudded at two sites, and injured during grafting.(2)

"It is important to note that Pch (*Phaeomoniella*) produces *pycnidia* on the surface of grape wood," says Dr. Doug Gubler, UC Davis Department of Plant Pathology. "The conidia produced from these *pycnidia* infect rootstock through the cut end and wounds produced by disbudding." (2)

Disinfection of the canes prior to cutting and propagating could prevent a great deal of disease. Unfortunately, only a few nurseries in California do this effectively.

"Some California nurseries wash the cuttings and often soak them in tanks with diluted chlorine (followed by clean water rinse) before cold storage," reports Dr. Andrew Walker, UC Davis Department of Viticulture & Enology. "Cuttings are rehydrated before grafting and a disinfecting dip in chlorine, and occasionally Benlate, is used to control fungi."

In an Italian experiment reported at a New Zealand seminar last year, Dr. Laura Mugnai compared "sterile" and conventional propagation of cuttings from rootstock mother vines that were known to be infected with *Phaeomoniella*. Sterile propagation consisted of soaking the canes in clean water and ENOVIT fungicide, (which is 70% tiophanate-methyl at a rate of 1% by weight) keeping all tools sterilized, and growing the vines in a greenhouse in sterile planting media. Of the conventionally propagated vines, 49% ended up infected, compared to only

Figure 7. Certified virus-free rootstock mother vine showing internal symptoms of infection with *Phaeomoniella*.

15% of the sterile propagated vines. (These statistics likely understate infection rates, see "false negative" under ***More confusion*** below.)

This experiment may give a good indication of rates of internal versus external contamination. Dr. Mugnai also notes, "Isolation experiments carried out on more unplanted bench grafts of different scion/rootstock combinations from nurseries in both Italy and France, fully confirmed these results.(1) The same wood browning was present in almost all the samples and *P. chlamydosporum* [now called *Phaeomoniella chlamydospora*] was isolated from 22% of them." (Very similar to Dr. Rego's result.)

In 1994, Dr. Strauss Ferreira published results of experiments with *Phaeomoniella* (then called *Phialopora parasitica*), which showed that the fungus gives off toxins which strongly inhibit callus formation.(3) In Dr. Gubler's trials, it was found that, in cuttings exposed to inoculum, callus formation was partially to completely inhibited. Infection not only affected callus formation, it also reduced plant height, number of internodes, number of roots, root length, and dry weight above ground.(2)

Poor callus formation, root growth, and top growth are all red flags for growers, indicating either infection or poor callusing conditions. Regardless of cause, poor growth and callus formation are undesirable for planting.

In hot water

Much research has been done, especially in Australia, using hot water to improve viability and reduce pest and disease problems in dormant plant material.(1) It is highly unlikely that such treatment will eliminate all young-vine-decline pathogens; results to date are encouraging enough to merit continued study.

Regarding callus formation, hot water treatment of dormant rootstock cuttings prior to propagation is most encouraging, according to Helen Waite and Peter May, Institute of Land and

Figure 8. Cross-section of four certified virus-free rootstocks that would not "take" field graft.

Food Resources, University of Melbourne, Australia.(1) If the process also reduces or kills pathogens, so much the better.

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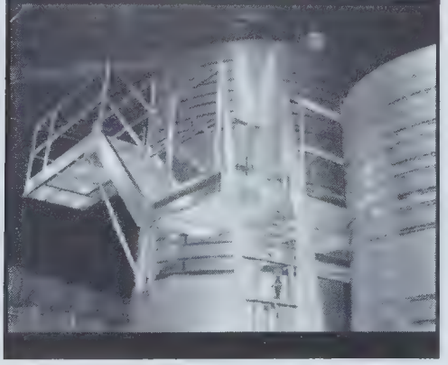

Back to planting day

Given the discussion above, growers should thoroughly inspect each vine before accepting or rejecting it. The root base, disbudding sites, and graft union should all be completely callused. Anything less than 100% callus of all propagation cuts is cause for concern and likely rejection. Roots should be evenly distributed around the root base with no sizable gaps. Flat sides connecting disbudding sites or stem grooving should also be rejected.

One option to avoid these fungal diseases is to plant rootstock for field grafting. Inspect each vine one-half hour to one hour after the top is cut off. Any sap bleeding from the cut should be clear, not brown or black. Get some of the vines showing symptoms tested in a pathology lab. If any of the vines test positive for *Phaeomoniella* or *Phaeoacremonium*, growers should seriously consider pulling out all vines with symptoms.

If only *Cylindrocarpon* is detected and your soil is well-drained, it may be desirable to wait and watch the growth, since vines have been known to outgrow this particular fungus in a few years if the soil is not excessively wet. Over-irrigation of *Cylindrocarpon* is generally thought to be a bad idea, while some feel that under-irrigation of the *Phaeos* is likewise a mistake. If you have both in your vineyard and cannot tell them apart visually, how will you make irrigation decisions? You are much better off not planting diseased vines.

Regardless of the type of vines that you are planting, you should discuss these diseases and the nursery's policy toward these diseases in advance of placing your order. Read the contract carefully, especially the warranty regarding disease and remedy.

Prior to taking delivery, it is wise to go to the nursery plot containing your vines and randomly dig some of them up. Any vines showing callusing problems should be tested in a pathology lab, and you should be prepared to do some slicing and dicing in the field and closely examine the xylem with a hand lens. Cutting into rootstock mother vines can also stimulate discussion.

"Normal functional xylem does not have tar-like contents inside the vessels, nor dark amber senescent cells surrounding those vessels," notes Dr. Martin Goffinet, Cornell University grapevine anatomist. "Living functional cells in fresh tissue are creamy greenish in young tissue near the cambium or creamy beige in older wood near the pith. In terms of a pathogen-free vine, the presence of 'black goo' is not normal. Black material that is isolated in vessel elements is not a normal occurrence, even in very old xylem tissue formation." Goffinet's guided tour (with photos) of the grapevine vascular system is highly recommended reading.(1)

Keep in mind that these diseases have been under-reported on California's North Coast. This is understandable in light of the tremendous expenses incurred in the AXR-1 debacle. Many growers simply do not wish to think about widespread infection of their new vines, and they certainly do not want to scare their bank, investors, or partners.

But it is vital that growers talk to each other and to the nurseries, so these diseases get cleaned up. Research is slow and state regulation of nursery practices takes even longer. It is up to growers to "motivate" nurseries to be proactive. Land prices and development costs are far too high for continued complacency.

One hopes that certification will some day include fungal pathogens along with virus, but that is not likely soon. Technical hurdles appear challenging and the political barriers even more so.

Measly vines

Where did these pathogens come from? Actually, they have been here all along as esca (known in California as "black measles"), which the Romans described in their vines according to Giuseppe Surico.(2) The difference is that esca involves *Phaeomoniella* and other fungi in the European vine *Vitis vinifera* above the graft union and

mostly *Phaeomoniella* in the American rootstock below the union.

Young vine decline involves infection with *Phaeoacremonium, Cylindrocarpon, Phaeomoniella,* and possibly some others in American rootstocks below the graft union. Esca infects pruning wounds and gives off spores from pruning wounds above the graft union on *Vitis vinifera* when it rains.

Young vine decline is essentially a group of diseases in rootstock mother vines, inadvertently propagated at the nursery. The European fungus *Phaeomoniella* and European vine *Vitis vinifera* have lived together for thousands of years and have been subject to human selection (see Charles Darwin's work on human selection of domestic species for a better understanding of how the vine and a fungus could get along). On the other hand, European fungi and American rootstocks have had only had one century to get to know one another, too short a time for even artificial selection to have done much.

What we now call Petri's vine decline was first reported in 1912 in Italy by Dr. Lionello Petri, who found the *Phaeos* in declining vines up to 18 years old on four different rootstocks, including AXR-1. He went on to study a number of diseases now known to be caused by viruses.

Interest in *Phaeomoniella* re-surfaced in the 1950s when Dr. Luigi Chiarappa studied "black measles" (esca) in California and Europe, but his efforts were set aside when he went on to study other crops. In the late 1980s, Dr. Phillipe Larignon, Dr. Bernadette Dubos, and others in Europe rekindled study of this pathogen in relation to esca, while Dr. Strauss Ferriera was working with the same nasty fungus in association with "slow dieback" of vines in South Africa.(3)

Apples and oranges

Although studies of esca and young vine decline currently overlap, the results in one area are not necessarily applicable to the other. For example, some studies relating to young vine decline have used *Vitis vinifera* instead

May 1, 2001 Bird Damage Control Bulletin

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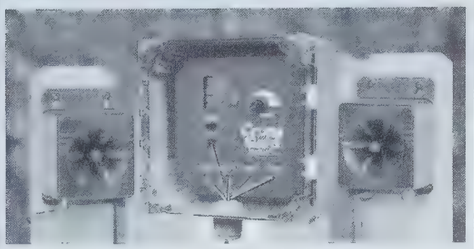

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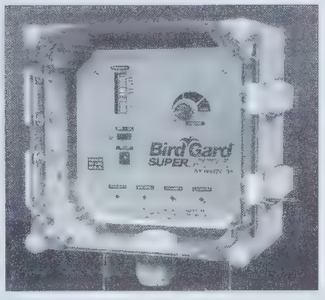

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of American rootstocks. Given that various genotypes of European and American vine species are unlikely to respond in the same way to various pathogens, it is very likely best that American rootstocks be used in research pertaining to young vine decline and *Vitis vinifera* be used when studying esca.

Dr. Larignon found internal infection of *Phaeomoniella* in *Vitis vinifera* canes only about 1% of the time while studying esca.(2) In Dr. Mugnai's work with American rootstocks, the internal infection rate was much higher (see "Italian experiment" under ***At the nursery*** above). It is worth noting that a study of esca and eutypa published in 1992, Dr. Larignon *et al* found *Phaeomoniella* in 40% of samples taken from American rootstocks, *Phaeoacremonium* in 5%,

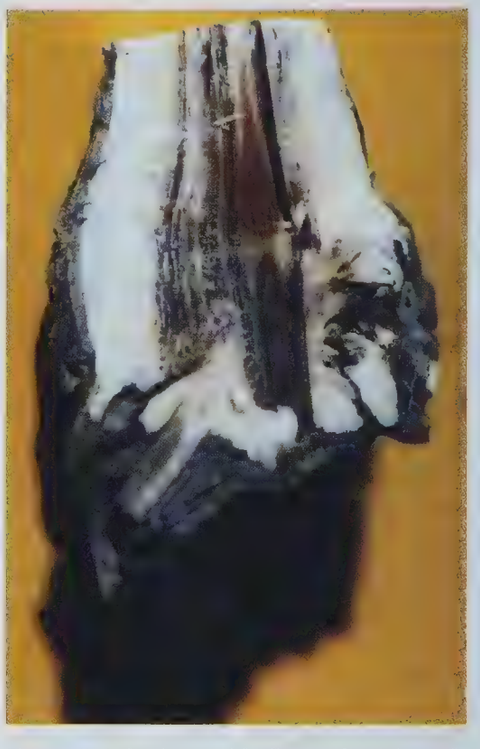
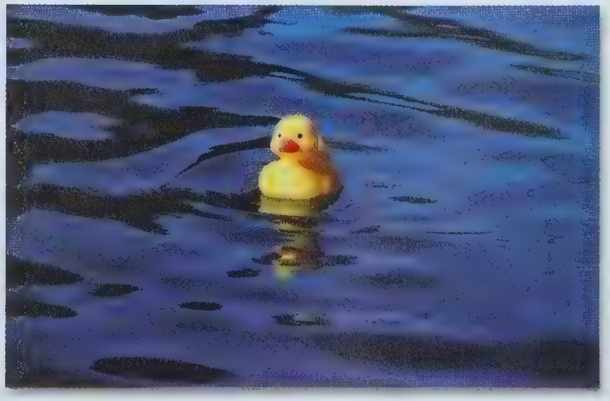


Figure 9. Infection inside first xylem ring of certified virus-free rootstock.

Figure 10. Cross-section of certified virus-free rootstock within days after field-grafting showing symptoms of infection.

Unnatural



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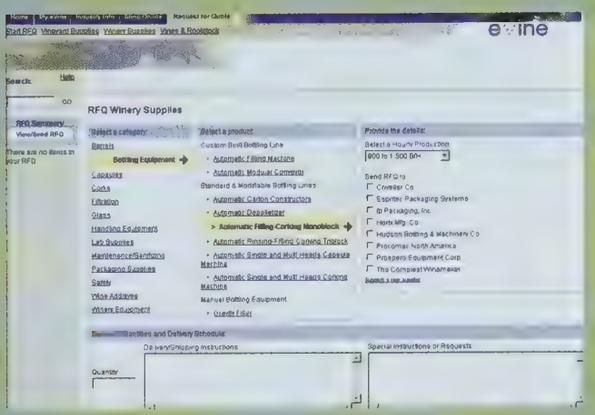

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and *Sphaeropsis* in less than 5% with a more diverse mixture of fungi from the graft union up (see Reference #1, page 46).

A rose by any other name

Some confusion has arisen because of name changes. Here is the latest:

1) What Dr. Petri and Dr. Chiarappa called *Cephalosporium* and Dr. Ferriera called *Phialophora* is *Phaeomoniella*, and it causes "Petri's vine decline" (also known as "slow dieback" and "black goo").

2) What Dr. Petri called *Acremonium* is now *Phaoeacremonium*, which along with *Phaeomoniella*, *Cylindrocarpon*, and possibly a few other fungi, causes "young vine decline" (an umbrella term often used in California).

3) Two species of *Phaeoacremonium*, *angustius* (CBS 249.95) and *inflatipes* (CBS 222.95), both found in vines in California, are being recommended for reclassification as the much more common *Phaeoacremonium aleophilum*. What was commonly reported as *inflatipes* in California is *aleophilum*.

More confusion

Adding to the confusion, the type of culture testing currently practiced to detect the fungi responsible for young vine decline is subject to "false negative" results. That is, the fungi can be present yet not be detected. Estimates vary, but 60% detection and 40% false negative from 100% infected wood may be about right for *Phaeomoniella*, according to Glenn Friebertshauser, Agri-Analysis. That is, if a vine is infected, there is only a 60% chance of detecting the infection via culture.

This helps us to understand how vines that show the "long, dark brown striations, that can reach all the way to the roots" that Dr. Petri described can test negative. Or, as Dr. Pascoe says, "It appears that the 'goo' may be produced at some distance from the infected cells, and this suggests that a toxin may be involved and also explains why we're sometimes unable to isolate *P. chlamydosporum* from perfectly typical symptoms." Please review Tables I and II again with the understanding that a bit more than half of the actual infections of *Phaeomoniella* were likely detected.

If all of the vines that you send in for testing have internal and/or external symptoms associated with fungal infection and some test positive while others test negative, it is likely that all are infected. False negatives are a nagging problem not just in viticulture, but in human diseases as well. As they say, "Absence of evidence is not evi-

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dence of absence." When in doubt, get more vines tested.

It is common for vines showing no foliar symptoms to have internal symptoms in the rootstock xylem and to test positive. Some have interpreted this to mean that the fungi involved are either weak pathogens or not pathogens at all. Please note that "apparently healthy" people are infected with HIV and hepatitis C — a slow pathogen is not necessarily a weak one.

On the North Coast, we are seeing the onset of decline in vines anywhere from one to 12 years old. Dr. Rego noted the same in vines up to 18 years old, and Dr. Pascoe in vines up to 24 years old. That is why Dr. Ferriera called it "slow die back." It's not so much that the dying is slow, but that the onset of symptoms can take many years.

One small bit of good news is that polymerase chain reaction (PCR) testing is coming of age for the *Phaeos* (but not *Cylindrocarpon)* and promises to be faster and more reliable than current tests.(2) The actual test takes only two days, though normal lab logistics and reporting require seven to 10 days, but that is far faster than the six to eight weeks required for culture testing. More important, PCR testing is nearly 100% accurate, compared to 60% for culture testing.

Why now?

How did these pathogens come in under the radar? As was the case at Pearl Harbor in World War II, the radar was switched off. Since Dr. Petri's work in 1912, little was being done to check for fungal pathogens in rootstocks until quite recently.

What may be the biggest factor in widespread disease is the worldwide planting boom starting in the late 1980s, which continues today. When demand outpaces supply, quality standards tend to decline, and the product follows. Substandard vines that should be burned are instead planted and grow poorly, if at all. Again, it is up to growers to "motivate" nurseries to improve the quality of their planting material.

One researcher has suggested that the "new" rootstocks may be more susceptible to young vine decline than AXR-1 was, due perhaps to the partial-vinifera parentage of AXR-1. This is doubtful, as Dr. Petri noted dark gummosis in AXR-1 in Sicilian vines that were in decline without phylloxera.(1) In any case, rather than begging the question, research would need to be done to confirm this conjecture. However, it is a moot point as growers do not have the option to use AXR-1 due to its fatal flaw regarding phylloxera. There is no option but to use American rootstocks.

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Management and stress

Environmental stresses and/or mismanagement are often blamed for vines that perform very poorly. Growers are often brushed aside with vague "maybes," such as, "Maybe you have a soil problem" or "Maybe you irrigated too much (or too little)" or "Maybe you have a nematode problem" or "Maybe the weather was too hot (or too cold) when you planted" (unlike Goldilocks, conditions are never "just right") or — and this one is usually the clincher — "Maybe this is the wrong rootstock for this site." This list of "maybes" is far from exhaustive.

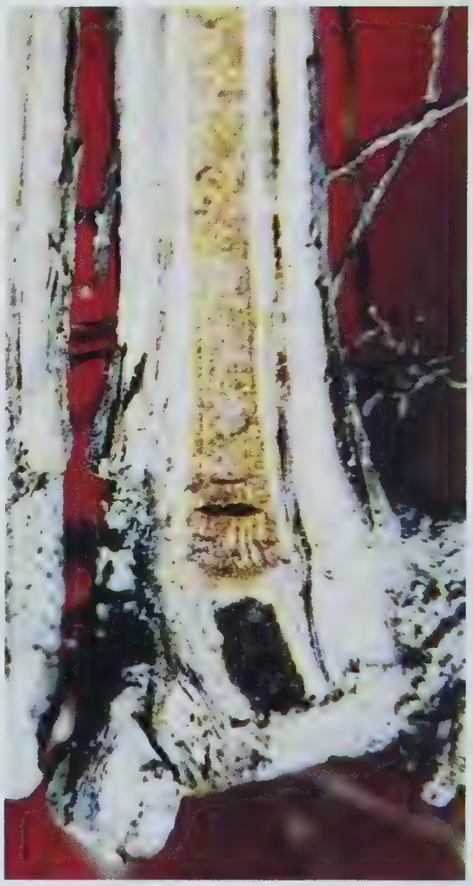
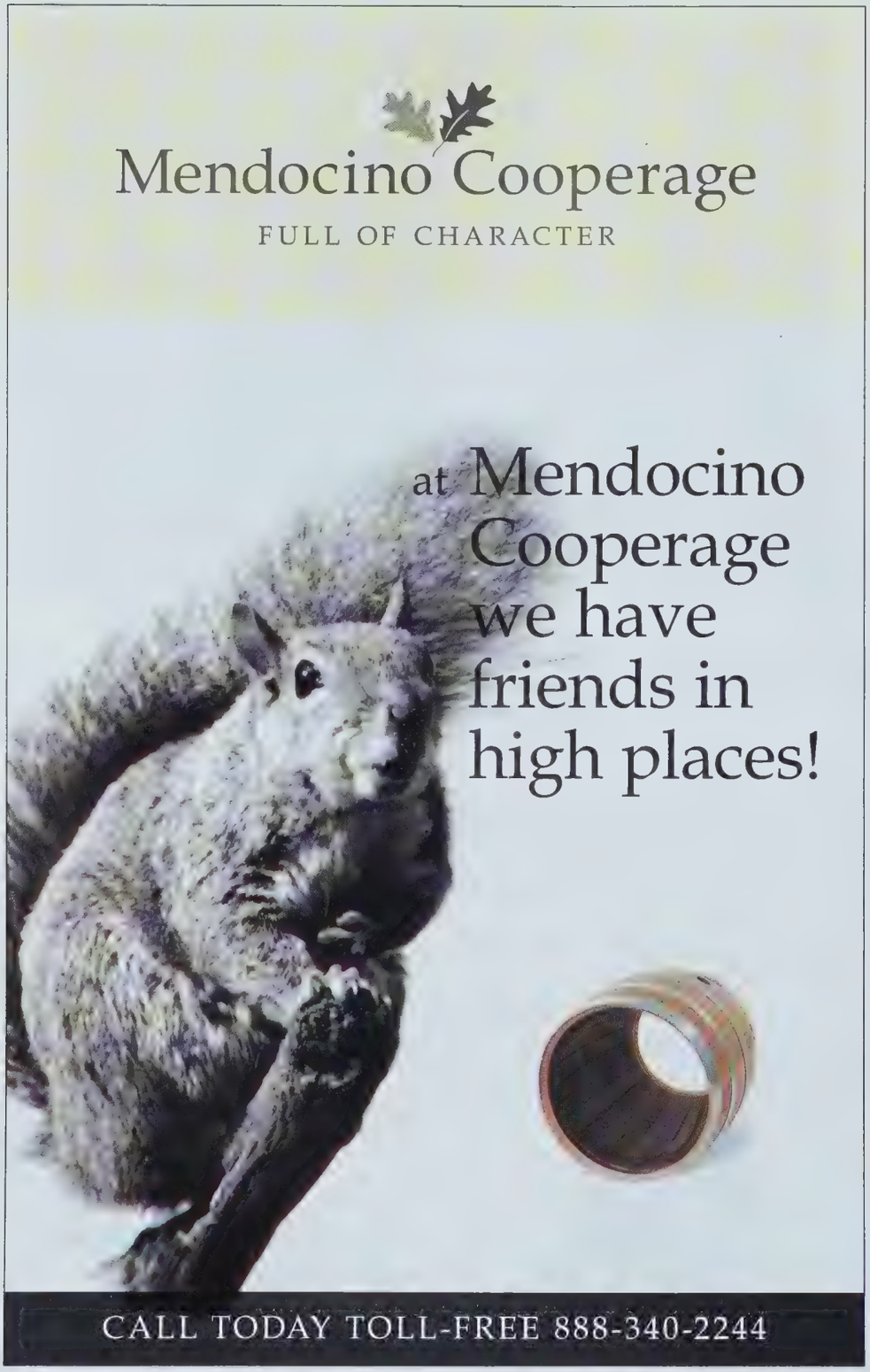


Figure 11. Certified virus-free rootstock delivered for planting showing symptoms of infection.

What is clear is that growers can do their best to minimize stress, but their vines would not be so sensitive to stress if they were not diseased. Adverse weather and other stresses exacerbate the problems associated with these fungal diseases, but the fundamental problem is disease, not stress.

Regarding stress, Dr. Smart notes, "Such interactions are so obvious to the astute observer as to require little comment. Certainly any organism, be it plant or animal, weakened by a stress, be it environmental or pathological, is more predisposed to disease. However, sometimes the symptoms are confused, and the inexperienced might blame the unknown problem solely on the environmental stress, for which the symptoms are commonly better-known."(3)

Some have noted that propagating rootstocks is extremely stressful. To this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viticultural consultant, Lucie Morton responds, "There is no question that if vines are infected with black goo, they are much more vulnerable to any stress, including the process of grafting. However, grafting is necessary ... and healthy vines have many strategies for surviving stress. Diseased vines are greatly handicapped.(1)

"This argument about the practical importance of stress is eerily reminiscent of the 1970s-era academic conjecture that phylloxera-susceptible AXR-1 could be recommended as long as it was confined to "less stressful" sites with irrigation and deep fertile soils. Lack of stress did not save AXR-1 from phylloxera, and lack of stress cannot be counted on to save vines from black goo, although it may delay the onset of decline for a number of years.

"Finally, great wines are most often associated with sites of low fertility and low water-holding capacity — that is sites with somewhat stressful conditions."

In a recent report on California grapevine materials, Lynn Alley *et al.* (UC Davis) noted: "Virus and virus-like diseases have probably existed in California's vineyards from the earliest years, but were poorly understood at the time and often went unrecognized or mis-diagnosed.

"Diseases caused by virus or bacteria-related problems were often attributed instead to unsound viticultural practices. In a 1931 book proposal, Frederic T. Bioletti, first head of the UC Department of Viticulture, addressed the issue of vine problems in a chapter entitled, 'Vine Troubles Attributed to Climatic, Soil, and Cultural Conditions.'" The UC Davis report then noted that the diseases that Bioletti was dealing with were actually leaf roll virus, fanleaf virus, and Pierce's disease.(4) Those who would attribute young vine decline to environmental stress and/or cultural practices should learn from Bioletti's example.

Proponents of the stress hypothesis must also explain the very uneven distribution of failing vines compared to those showing normal to very vigorous growth (see Figure 1). What stress did the stunted vines experience that their healthier counterparts nearby did not? Why are failing vines intermixed with productive vines? What stress results in a "shotgun" pattern of dying, stunted, weak, and thriving vines? Such patterns are more easily explained by having healthy vines mixed in with vines infected with various pathogens on planting day as illustrated in Tables I and II. ■

Michael Porter worked as a winemaking assistant and as a research assistant at Crocker Nuclear Lab, UC Davis while studying physics at Cal State University,

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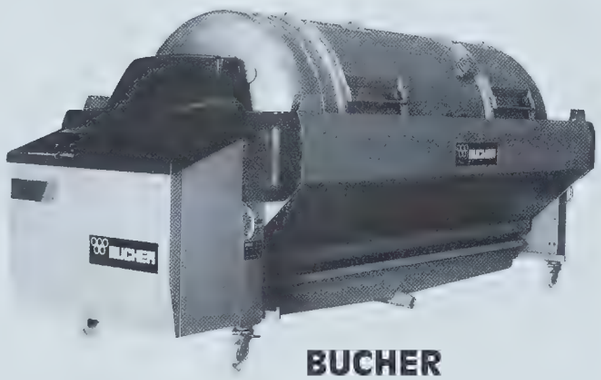

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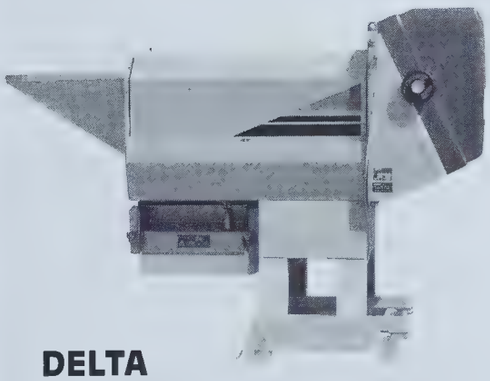

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Chico. He earned a master's degree in earth sciences from Chico. He has taught geology, meteorology, oceanography, physics, and astronomy in junior colleges. Since 1984, he has provided soil fertility, vine nutrition, and water management consulting services.

Recommended reading

Wines & Vines, November 1995, p. 46, "Mystery Diseases Hit Young Vines," Lucie Morton.

Wines & Vines, January 1997, p. 62, "Update on Black Goo," Lucie Morton.

Practical Winery & Vineyard, May/June 1998, p. 32, "Young Grapevine Decline in California," Heather Scheck *et al.*

Practical Winery & Vineyard, November/December 1998, p. 5, "Another Disease Looming?" Richard Smart.

Black Goo, Symptoms and Occurrence of Grape Declines, edited by Lucie Morton, 1999, International Ampelographic Society, Healdsburg, CA, and Santa Rosa Junior College libraries. If checked out, try the reserve desk. (To order a copy, cost is $29.95 plus $5 shipping/handling, contact IAS/ICGTD, fax: 540/933-6987, e-mail: fortvin@shentel.net).

Phytopathologica Mediterranea, Special Issue on Esca and Grapevine Declines, 2000, Mediterranean Phytopathological Union, Healdsburg, CA, and Santa Rosa Junior College libraries. If checked out, try the reserve desk. (To order a copy, cost is $67.25 plus $5 shipping/handling, contact IAS/ICGTD, fax: 540/933-6987, e-mail: fortvin@shentel.net).

Where to get vines tested:

Glenn Friebertshauser, Agri-Analysis, 45133 Co. Rd. 32-B, Davis, CA 95616, tel: 530/757-4656, email: agrianys@yvm.net

Sharon Harney, Forensic Analytical Laboratory, 2959 Pacific Commerce Dr., Rancho Dominguez, CA 90221, tel: 310/763-2374.

Diana Fogle, Plant Pest Diagnostics Branch CDFA, 3294 Meadowview Road, Sacramento, CA 95832 tel: 530/262-1100.

James Stamp Consulting Service, 1212 Beattie Ln., Sebastopol, CA 95472, tel: 707/829-8405, email: stampjames@aol.com.

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References

1. *Black Goo, Symptoms and Occurrence of Grape Declines,* edited by Lucie Morton (see above).

2. *Phytopathologica Mediterranea, Special Issue on Esca and Grapevine Declines,* Mediterranean Phytopathological Union (see above).

3. "Slow Dieback of Grapevines," Strauss Ferriera, 1994, *South African Jrnl of Enology & Viticulture.*

4. "Retrospective on California Grapevine Materials, part II: Problems facing California's growers," Lynn Alley, Deborah Golino, and Andrew Walker, 2001, *Wines & Vines.*

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Grapes have flourished in Constantia Valley, just nine miles south of Cape Town, South Africa, for more than 300 years. Governor Simon van der Stel secured a land grant of more than 6,000 acres from the Dutch East India Company in 1685. He called the farm Constantia and planted 100,000 grapevines there.

By the 18th and 19th centuries, Constantia *wijn* had grown world famous. The dessert wine was a favorite of Napoleon and sipped by characters in books by Charles Dickens and Jane Austen.

Today, Klein Constantia Estate is located on 360 acres of that historic land grant. The winery and vineyards specialize in Sauvignon Blanc, Chardonnay, Rhine Riesling, Cabernet Sauvignon, Marlbrook (a blend of Cabernet Sauvignon, Merlot, and Cabernet Franc), and Vin de Constance, a re-creation of the early dessert wine. All Klein Constantia wines are grown and bottled on the estate.

When Duggie Jooste bought the estate in 1980, he and his family immediately began restoring the Cape Dutch homestead and winery. They built vaulted barrel cellars and replanted the 185 vineyard acres.

Jooste's family has been involved in the South African wine trade for four generations. He, his son Lowell, and vineyard manager Kobus Jordaan grow the grapes. Ross Gower makes the wine. Gower is a graduate of Elsenburg, Stellenbosch, and Weinsberg, Germany. He spent seven years at Nederburg Winery and was winemaker at Corbans, New Zealand, before coming to Klein Constantia.

Vineyards

Klein Constantia's vineyard soils are well-weathered, decomposed granites from one to two meters deep. The darker topsoil is only 30 to 40 centimeters (12 to 16 inches) deep, with yellowish, loamy clay weathered granites beneath.

The estate's location on the narrow Cape Peninsula, which juts out into the south Atlantic on the western tip of the continent, gives it a cool and gentle maritime climate. Rainfall averages over 48 inches per year, with most falling in the winter months from May to August. Vineyards are dry farmed.

The vineyards are 70% white varieties, including (in order of quantity) Sauvignon Blanc, Chardonnay, Rhine Riesling, and Muscat de Frontignan. The reds (in order) are Cabernet Sauvignon, Merlot, and Cabernet Franc. There are smaller blocks of Semillion, Shiraz and Pinot Noir.

Planted on the slopes of Constantia Mountain, which range from 90 to 300 meters (300 to 1,000 feet) above sea level, the vineyards are in two distinct mezzo-climates. Reds are planted on the low and warm north-facing slopes, and whites are on cool, higher, south-facing slopes. The slopes also assure excellent drainage.

Red varieties are nearly all on 101-14 rootstock for better ripening, moderate growth, and smaller berries. White varieties are on 110-R or 99-R for drought resistance on the higher slopes.

Row spacing is 2.5m on flatter slopes and up to 2.8m on steep slopes. Vine spacing is 1m to 1.4m, depending on variety and soil vigor.

Yield varies from four to eight metric tons per hectare (1.6 to 3.25 metric tons per acre). In general, the higher slopes have the lower yields, because they are drier, soils are poorer, and winds are higher.

Lowell Jooste reports that the cool maritime climate helps the grapes maintain acidity and flavor and also results in longer hang time. "Budbreak is fairly early for such a cool region (second and third weeks of September), mainly because of relatively high night temperatures. Being on a peninsula, we don't have the significant variation of temperature that inland areas have.

"Bloom is the first week of November for most varieties and a few days later for Cabernet Sauvignon, Cabernet Franc, and Shiraz. On the higher slopes, bloom is retarded for about one week.

Veraison is normally the third week in December for Sauvignon Blanc and Chardonnay and at the end of the month for Cabernet Sauvignon.

"We normally start harvest in mid-February and finish in late March," he explains. "With a cooler climate and slower ripening, our harvest begins about two weeks later than in areas further inland, such as Stellenbosch and Paarl."

Wines

Klein Constantia produces about 45,000 cases of wine annually.

Sauvignon Blanc, the winery's showpiece varietal, is tank-fermented because oak flavors would compete with rather than complement the fruit flavors. The 2000 vintage was blended with 10% Semillon. Bottled in August, following harvest in February, the wine is released in December.

Klein Constantia Chardonnay is fermented and then matured for six to eight months in 60% new French oak barrels. While in barrel, it goes through spontaneous malolactic fermentation. It's held six months before release to ensure integration of wood and fruit and offers a toasty, weighty style.

The winery's Cabernet Sauvignon combines "new generation" fruit with the traditional drier Cape style. The wine is matured in French oak barrels for two years.

The winery's Marlbrook is a complex, elegant blend of 50% Cabernet Sauvignon, 40% Merlot, and 10% Cabernet Franc (with some variation between vintages). It ages in French oak for two years. ■

Vineyard pedigree outshines winemaker impact

PARTICIPATING PRODUCERS AND BECKSTOFFER VINEYARD SOURCES:

Vineyard George III, Rutherford, CA
Clos du Val, Napa, CA
Bernard Portet, owner/winemaker
Merryvale Vineyards, St. Helena, CA
Steve Test, winemaker

Oakville Vineyard, Oakville, CA
Cardinale & Atalon Estates, Oakville, CA
Charles Thomas, senior vice-president of production, operations/winemaking
Paul Hobbs Winery, Sebastopol, CA
Andy Smith, associate winemaker

Vineyard No. IV, St. Helena, CA
Guenoc & Langtry Vineyards & Winery, Middletown, CA
Malcolm Seibly, winemaker

Vineyard X, Oakville, CA
Merryvale Vineyards, St. Helena, CA
Steve Test, winemaker

Beckstoffer Vineyards
Andy Beckstoffer, owner
Dave Michul, vice-president, operations

BY Eleanor & Ray Heald
Contributing editors

Vineyard designating, a time-honored European tradition, has burst upon the domestic wine scene.

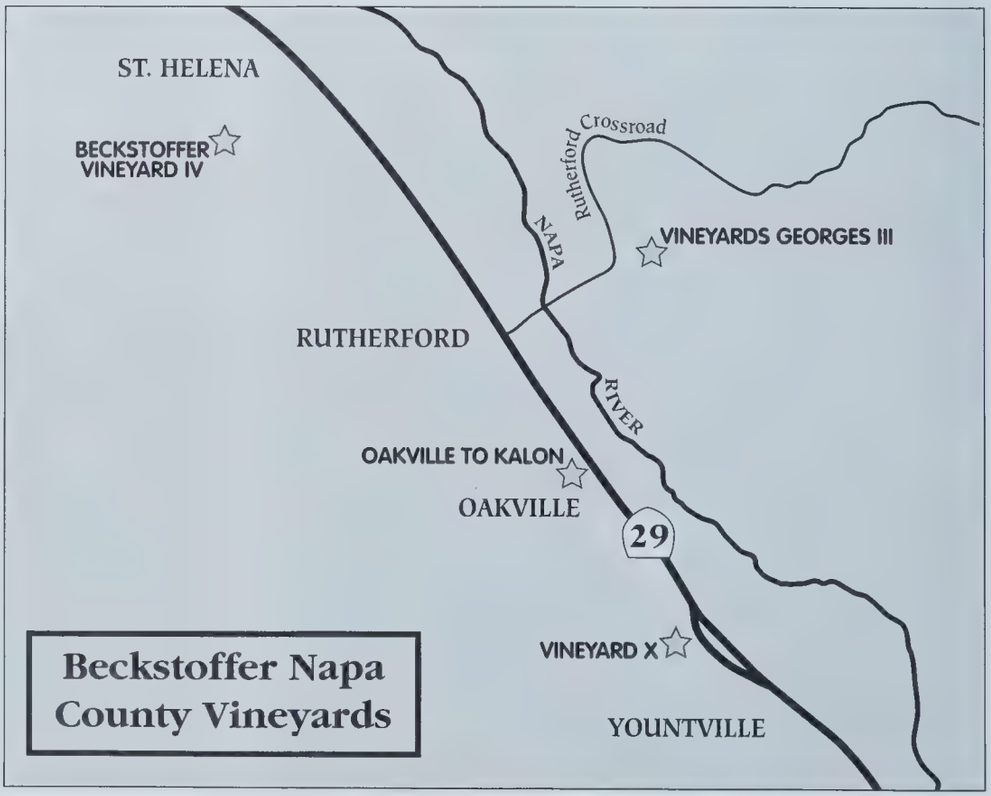
Many such designates have not yet proven their consistency or uniqueness over time. They also lack historical significance. In a given vintage, such untested vineyards may have distinctive characteristics that warrant singular bottling. But will consistency be a problem? Will lack of lineage backfire?

Time will answer these questions. California does, however, have some vineyards with pedigrees. For decades, and independent of the producer, wines from certain soils have developed identifiable aromas and flavor profiles.

PWV focuses on pedigreed Napa Valley Cabernet Sauvignon vineyards owned by Andy Beckstoffer: Vineyard George III in Rutherford (formerly Beaulieu Vineyard No. 3), Beckstoffer Oakville (formerly BV No. 4 owned by Beaulieu Vineyard and part of the renowned To Kalon Vineyard), Beckstoffer No. IV in St. Helena (part of historic holdings of George Beldon Crane), and Vineyard X (formerly part of Vine Hill) in Oakville.

Producers vineyard-designate these wines rather than upgrade a larger Napa Valley blend with the fruit. They explain how vineyard pedigree outshines winemaker impact in the production of Cabernet Sauvignon.

"The longer winemakers work with individual parcels and employ winemaking techniques that showcase a particular *terroir,* we will see more clearly what the land has to offer," says Andy Beckstoffer. "If the land makes a difference, it must be sensed in the aroma and flavors of a wine.



"Viticulturists and winemakers can notch up wine quality from the high level already achieved. The notion of singular wines from a place is a mantle still held by the French, but up for capture in the Napa Valley. Because we have the soil, climate, and freedom to use all the technology available, we have a real shot at that target."

Vineyard George III

Beckstoffer has owned the former Beaulieu Vineyard No. 3, situated off Silverado Trail in Rutherford, CA, since 1988. Georges de Latour, founder of Beaulieu Vineyard, purchased the 225-acre Cabernet Sauvignon vineyard in 1923. Beckstoffer has farmed the vineyard since 1971. Joined with another 25-acre parcel, the combined 250-acre vineyard borders Caymus Vineyards and is now known as Vineyard George III, after the original owner.

Between 1989 and 1993, Beckstoffer replanted the gravelly loam soils in the Perkins, Pleasanton Series using UCD Clones 4 and 7, Clone 6 (Argentine origin), and 337 (ENTAV) for clonal diversity expressed in blocks. Due to a nematode problem and fan leaf virus, only 039-16 rootstock proved suitable.

Clone 4 was of particular interest because it was disease-free and not heat-treated. "We don't know what heat treatment does to vines and to varietal character," Beckstoffer maintains. "I believe that clones that have not been heat-treated more clearly express the varietal and the site in which they are grown."

A similar scenario exists for Clone 6, often referred to as the Jackson Clone, one of the oldest Cabernet Sauvignon clones in California. It was rediscovered in the University of California's Jackson field station in the 1960s. Long-disregarded as too low-yielding, Clone 6 was identified as producing superior and distinctive wines in clonal trials in the Napa Valley in the 1980s.

Clone 7 is the highest yielding clone. Clones 4 and 337 are lower yielding, but this can vary with the soil and chosen trellis system. Lowest yielding is Clone 6 because crop load is often reduced by poor flowering.

Deep, well-drained alluvial fans run 50 to 60 inches deep. Vines on the GDC trellis in deeper soils are spaced 11x6. Those on the VSP trellis in less vigorous soils are spaced 8x6.

Gravel and deep clay streaks run through the vineyard, requiring canopy manipulation and vigor reduction to raise the fruit quality. "Each year, we farm these blocks slightly differently in a process of fine tuning," says Dave Michul, vice-president of Beckstoffer Vineyards operations.

Notching up George III

In response to winemaker feedback, Michul began to retrofit portions of the Cabernet Sauvignon vineyard in the 1997 growing season. Fruit quality was being compromised by canopy management within both the GDC and VSP.

Shoot positioning with the GDC was evaluated for canopy management, and opening up the canopy middle was discontinued. "Textbook farming of GDC has shoots raked over and folded down to expose the fruit. For Cabernet Sauvignon grown in George III, the traditional GDC does not work as well because the fruit can receive excessive sunburn," Michul contends.

"Now, we do not rake the shoots over, we allow them to grow the way they would naturally. Along with that, we devigorate the vines by incorporating cover crops, such as Champion Mix, a low-growing fescue. Now, vines appear to be in better balance, and we've experienced better fruit quality.

"What we do may be viewed as a holistic form of farming. We're not looking at the canopy only. Cover crops have become an important part of vine balance. We're not trying to force Cabernet to grow downward, which it does not want to do. While Cabernet does not roll over like Merlot, the canopy does open naturally. With shoot

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positioning and some leaf removal, we have the desired speckled sunlight on the clusters without direct heat."

Michul also notes that he's changed the fertilizing and watering programs. At 1% to 2% veraison, KTS (potassium thiosulfate which is 25% potassium) is applied to assist the vine in producing better anthocyanins in the fruit and higher sugar levels in the leaves. Overall, this leads to better phenolics in harvested fruit.

"Farming a vineyard cannot focus on a single element such as the canopy," Michul maintains. "It must focus on the whole picture — multiple factors impact fruit quality."

Annually, pruning weight ratios in the window of 5 to 7 lbs. per vine are achieved. But Michul says it depends on the area of a particular block. The same ratio for Clone 6 has a different meaning for Clone 4, and in one part of a vineyard compared to another.

Winemaker interplay

To raise grape quality even higher, in some of the more vigorous soils (yielding the equivalent of 7 to 9 tons per acre of harvested grapes) some GDC has been retrofitted (at $3,000 per acre) to a lyre trellis. That is being evaluated with Charles Thomas at Cardinale for use in the Atalon brand.

"We've now made wine from the retrofitted vines for two years," Thomas comments. "With any good winegrowing trial, three years of information is needed to predict a pattern.

"From vines in more fertile soil, it appears that we are getting a little less herbaceous character with the lyre than the standard GDC. As Dave said, one of the advantages of the GDC, when it's farmed correctly, is speckled sunlight. With a semi-vertical lyre, there is the downside of exposing the fruit to too much direct sunlight."

Beckstoffer adds, "We no longer manage for Cabernet Sauvignon. We manage a particular piece of land. When the vineyard was planted, we were trying to achieve diversity in wine flavors. Yields are something you just get. The goal is to achieve higher quality and hopefully higher yield with limited downside factors."

Thomas adds that what the future holds is not just site-specific viticulture, but vintage-specific farming. This includes the methods employed either pro-actively or responsively to adapt to the growing season. This thinking is an outgrowth of the 1998 vintage in Napa Valley. Since then, farming of vineyard-specific wines has stopped being a mere set of numbers.

While Atalon has not yet released a commercial bottling labeled Vineyard George III, Clos du Val began labeling as such with the 1997 vintage. "Beckstoffer Vineyards and Clos du Val have had a 25-year relationship," Clos du Val owner/winemaker Bernard Portet reports. "We bought fruit from George III in both the 1995 and 1996 vintages to assess the potential of a vineyard-designate bottling. We had a good understanding by 1997 and were able to release a wine with distinct vineyard character."

For some years and concluding with the 1998 vintage, Merryvale released a blend of Cabernet Sauvignon and Merlot that was designated Beckstoffer Vineyards Selection. Winemaker Steve Test believes it was not the best articulation, since grapes were sourced from a number of Beckstoffer Vineyards, not solely George III, and included Merlot from vineyards in two distinct viticultural areas.

"Conceptually and philosophically," Test maintains, "it was kind of a mush. We are now working on vineyard-designating George III Cabernet Sauvignon from a 4.7-acre parcel at the eastern edge of George III, adjacent to Silverado Trail, which is exclusively Clone 6.

"We knew the history of this parcel before we were able to buy the grapes, and it performed well. From the 1999 vintage, it is again showing well, and I

fully anticipate that it will be a unique bottling for Merryvale.

"At this time in its development, the 2000 wine is dense and concentrated, with excellent balance and fine tannins. The 2000 vintage does not seem to be quite as good for Cabernet Sauvignon as 1999, in general. The 1999 wines are a little viscous, regardless of vineyards.

"But there will always be issues vintage to vintage. If the wine doesn't perform in a particular year, then it won't be bottled as a vineyard designate."

Beckstoffer Oakville Vineyard

The former Beaulieu Vineyard No. 4, located across Highway 29 from Opus One (Mondavi-Rothschild venture) in Oakville, was purchased by Beckstoffer in 1993 and called Oakville Vineyard. The 89-acre parcel, replanted by Beckstoffer in 1994, was part of the original 240-acre To Kalon Vineyard, first planted in 1865 by viticultural pioneer Hamilton Crabb. Loam soils 50 to 60 inches deep in the vineyard are well-drained.

In 1940, Georges de Latour bought the 89-acre piece of To Kalon vineyard, replanted it, and named it BV No. 4. From then until 1993, it was owned by Beaulieu Vineyard and was used in its top Cabernet Sauvignon program.

Beginning in 1994, Beckstoffer's Oakville Vineyard was totally replanted with the concept of a Bordeaux varietal blend in mind. The decision was made not to use Malbec, but to plant 80% to Cabernet Sauvignon Clones 6, 4, and 337. The balance is 10% Merlot (Clones #1 and #3), 5% Petit Verdot, and 5% Cabernet Franc to offer winemakers a spice rack to select from and create complexity as well as personality in their wines.

Vines oriented north-south were spaced 8x7 on VSP in the replanting. Later, and extending to 1997, 6x7 spacing was used to complete the project. This spacing has become the Beckstoffer standard. The same nematode problem as experienced in George III plagues this vineyard and restricts rootstock choice to 039-16.

Because it gives both the viticulturist and winemaker the best of both worlds, Michul prefers north-south row orientation. However, he notes that it is necessary to handle VSP differently. No hedging is done on the western side of the canopy, and leaves or laterals are not pulled.

In 1997, Charles Thomas picked the east and west side of the vine at different times. "Our adaptations created a more uniform crop so that this type of situation would not have to be repeated," Michul observes.

Thomas explains that "the east side of the vine lagged behind the west side in anthocyanin development. West side berries had begun to shrivel. With the new canopy management, both sides are more uniform."

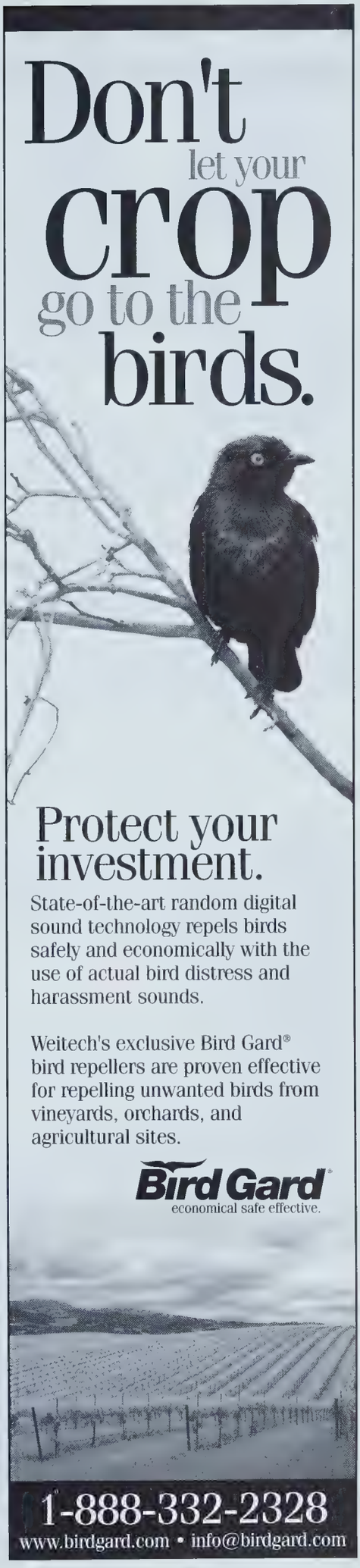
In some areas of the vineyard, devigorating cover crops are used, but in other areas, cover crops are used only to protect against winter erosion.

Blocks planted in 1994 and 1995 are well established. With the 1996 and 1997 plantings, Michul is still gauging the vineyard to judge natural tendencies and what he will do to grow the best quality fruit. "With the loss of AXR-1, we must use 039-16 rootstock as we did in George III because of fan leaf virus. It has taken us time to understand its idiosyncrasies," Michul contends. "For one thing, 039-16 does not like to be water stressed.

"At Beckstoffer, we believe that basic viticulture has been forgotten in the chase for what's new. As we plot strategies to improve fruit quality, we attempt to take each block back to basic viticulture first, before we consider changing pruning methods, irrigation, or other farming techniques.

"We're conscious that this is a newer planting and still evolving. We know, for instance, the bud count window at pruning this year, but that may change next year, depending on our observations during the growing season. With one vine, it may be 20 buds and another vine 18 or 16. We judge by vine appearance.

"Each vineyard and vineyard block is different, and we employ a number of techniques to have each block express its uniqueness within a given vineyard. We believe we know what the vine can do in its particular location."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Due principally to eutypa, the cordon for VSP at Beckstoffer Oakville and all vineyards in the company is being developed as bilateral. Because unilateral cordons promote poor spur positions, Beckstoffer is in favor of bilateral cordons. Bilateral will also fill the canopy better and offer improved vine balance.

Thomas suggests that when a unilateral cordon is too long, the Brix difference on bunches farther from — compared to those closer to — the trunk are unacceptably different. Additionally, there is also diversity within a unilateral as far as bud break and bloom.

"The 6x7 spacing has moved the rows closer together and the vines farther apart in the row," Beckstoffer adds. "The problem is not so much the unilateral cordon, which may very well work in another vineyard, but that it's not suited to our seven-foot vine spacing. There are no panaceas here. We're not saying this is the correct way, and that way is incorrect. It depends on soil composition and climate.

"The major consideration in any vineyard should be uniformity. We, as Dave said, do not want to pick east and west sides of the vine at different times. We want all bunches around the Brix level average desired by the winemakers."

Beckstoffer Vineyard No. IV

Owned by Beckstoffer since 1983 but planted in 1975, the 21.8-acre Beckstoffer Vineyard No. IV, located west of Highway 29 and southwest of St. Helena at the end of Sulphur Springs Avenue, is planted to Cabernet Sauvignon and two acres of Merlot.

On an alluvial bench, the parcel is sloped slightly to the east, 25 feet above Sulfur Creek at the mouth of Sulfur Canyon, and laying up against the western hills. Soils are well-drained sandy loam with a significant amount of small stones and gravel to a 50- to 60-inch depth. It has low vigor potential, with low nitrogen and high calcium and potassium content.

Situated off the west valley floor, the vineyard receives morning sun before the center and eastern edges of the valley. In late afternoon, when the sun goes behind the western hills, Beckstoffer IV is in the shadow, while the rest of the valley is still receiving sunshine. Therefore, it warms up and cools off earlier than its central and eastern valley counterparts.

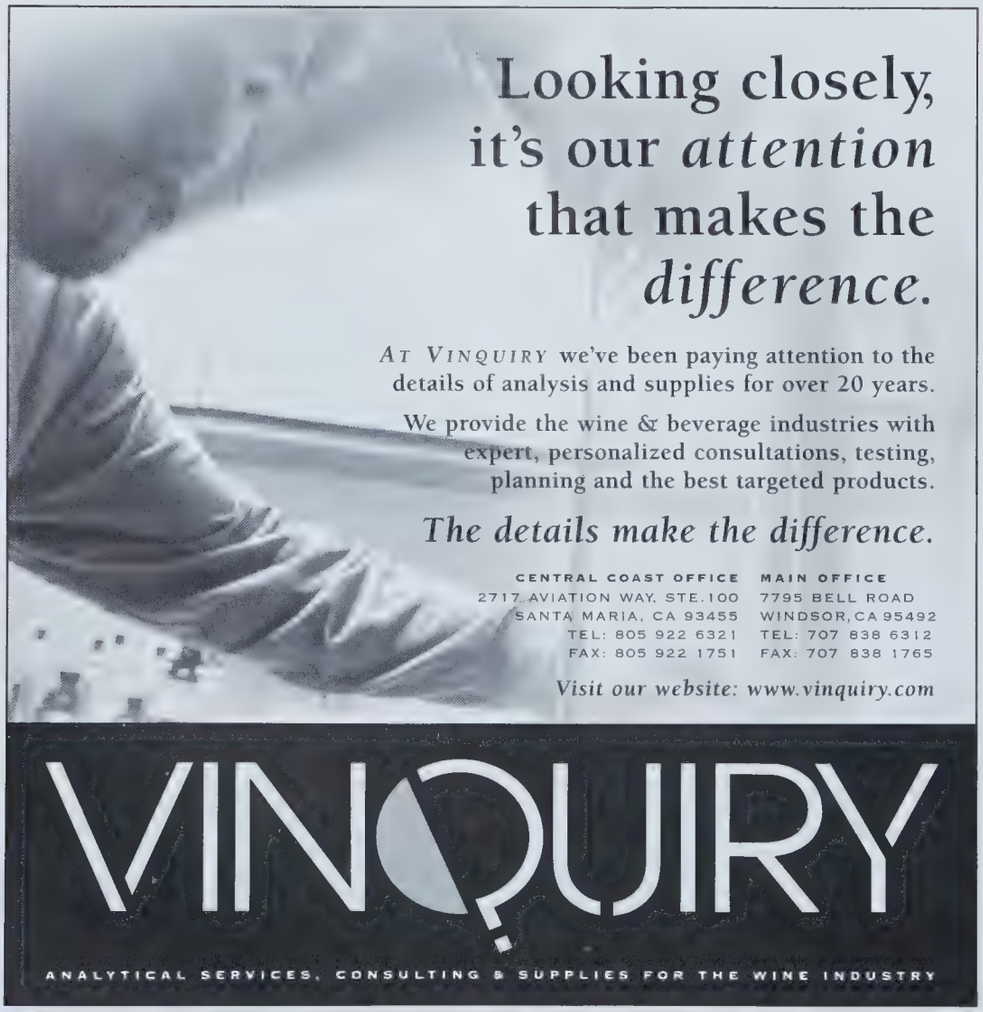
Temperature influences are similar to the rest of the Rutherford/St. Helena area, where during the ripening season in late summer, days can warm up into the 90º to 95ºF range, then cool down into the 50s and 60s at night, for a 40º swing.

Planted to Clone 7 on St. George and some AXR-1 rootstock, the vineyard, spaced 8x8, is spur-pruned on a bilateral cordon, using a standard single-wire "T" trellis. The original vineyard was trained lower to the ground, so post-purchase Beckstoffer raised the cordons and the fruiting zone to allow more airflow through the canopy to improve control of powdery mildew. The vineyard ripens relatively early in the season for Cabernet Sauvignon, and although it shows spotty signs of phylloxera, it has not been replanted.

Guenoc has been making Cabernet Sauvignon as a vineyard-designated reserve wine from this property since 1987. Winemaker Malcolm Seibly has worked with the vineyard's fruit since 1996. Out of all the vineyards from which Guenoc purchases grapes in the North Coast, he considers Beckstoffer IV to be the most naturally in balance.

Michul explains that the canopy needs little manipulation due to good spur positioning and proper shoot growth. Pruning for the number of spurs and buds per vine is done by visual examination in the field. Crop levels are light, averaging 2.5 to 3.5 tons per acre, with small clusters and small berries. Second crop, if any, is removed in the summer.

Due to a lack of water availability, establishing irrigation in this vineyard required a significant commitment. In 2000, a new well was dug to gain versatility in drip irrigation sets so hang time could be prolonged.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"Now, the drip system provides just enough to replace rainfall in a dry year to prevent undue stress from heat," Seibly reports. "The combination of all the factors mentioned produces a condition where the vines switch from the 'vegetative' growth phase of the summer into the fruit-ripening stage of the fall at an earlier point compared to other vineyards, which may be carrying a bigger crop load or are irrigated more frequently."

Prior to the new well, a manual fertilizing program under the drippers helped to keep the 30-year-old vines healthy. Now vines are fertilized through the drip system. In 2000, vines were also artificially mulched with straw to aid retention of soil moisture.

Seibly also notes that "Beckstoffer IV consistently produces Cabernet Sauvignon of great distinction and character. The wines are typically very dark in color with unmistakable open and generous aromatics and flavors of black fruits and spices that are a constant from year to year, regardless of the vintage.

"While it is arguable that virtually any red variety would produce outstanding wine if grown on the Beckstoffer IV vineyard site, it is an ideal match for Cabernet Sauvignon, yielding wines of remarkable class and breed from one vintage to the next."

Beckstoffer Vineyard X

In 1996, Beckstoffer bought this 45-acre vineyard in Oakville (part of the Vine Hill Ranch) from the Kelham family. However, the purchase did not give him the right to the Vine Hill pedigree name, so for the time being, it is called Vineyard X.

Beginning with vintage 1999, Merryvale will vineyard-designate Cabernet Sauvignon made from a block of old vines still remaining, while the site is undergoing a replanting program using similar schematics already discussed.

"This is a great site, and long-term, I have confidence that fruit from replanted vines will be as good or better than the results we are now getting from the old block," says Test. "I predict this, because for many years, Merryvale has purchased exceptional Cabernet Sauvignon from the Vine Hill Ranch."

Evolution to a style

Beckstoffer contends that he does not "sell Cabernet Sauvignon" from one of his pedigreed vineyards. Wineries purchase specific rows in designated blocks. "The contract probably started out that we agreed on specific tonnage from the vineyard," he explains. "But once the wine was made, winemakers asked to see the vineyard section that was purchased. Over time, we've evolved together to create a contract that specifies blocks and rows."

Annually, Beckstoffer requests that wineries purchasing grapes submit wines for a block tasting of approximately 100 different wines. Winemakers rate the wines and are able to fine-tune future purchases based on the tasting.

Thomas explains his experience with Beckstoffer's Oakville Vineyard. Some of the oldest replanted blocks (A2 which is Clone 4 and B2, Clone 337) have similar soil profiles, but produce two distinctly different wines. Clone 4 is consistently more tannic than Clone 337.

"As a winemaker, I exercise different techniques, such as extended skin contact or not, with the two blocks," notes Thomas. "Because I do not believe that the number of pumpovers really matters, this regime stays the same regardless of clone or block. I also tend not to adjust a peak fermentation temperature. Ultimately, it is the *terroir* factor that is showcased in the wine. Winemaker response is only fine tuning."

Seibly explains that to have the option of lengthening fermentation and maceration for an average of 25 days, he always allocates winery space to handle Beckstoffer No. IV fruit.

To create more building blocks for the final blend, Seibly requests earlier harvest of some blocks, with the remainder of the vineyard typically harvested about three days later.

Winemaking techniques are essentially the same for both lots, but depending on assessment of the fruit, Seibly may choose to cold soak or

select a different yeast for one and not the other. Once dryness is achieved, the fermentors are tasted daily to determine the optimal time to drain and press. Wine is transferred to one-third new and two-thirds second-fill French oak barrels after pressing.

Paul Hobbs Winery's associate winemaker Andy Smith reports on the winery's handling of four blocks and two clones from Beckstoffer's Oakville Vineyard. Clone 4 and 337 are handled similarly in the winery.

"Near the end of fermentation, the distinct differences between the clones are most noticeable," Smith says. "Depending on individual characteristics, we may modify our extraction processes — draining and pressing.

"Tannin extraction and desired mouthfeel are obtained during the active and latter phases of uninoculated fermentation. To obtain maximum aeration, a combination of punch-downs and pump-overs are used. Pressing is done after about three weeks of skin contact that includes three to four days of cold soak. Wine is transferred to barrel immediately."

Winemaking decisions

"All Cabernet Sauvignon at Merryvale is treated similarly," Test acknowledges. "As time progresses, the wines are, however, evaluated for barrel selection."

Is he then letting the fruit speak? "You'll never hear me say that," Test responds. "Decisions impacting wine character begin at harvest and end at bottling. Each one is important and can change the personality of a wine.

"Obviously, there is something essential to the character of the wine that comes from the vineyard. But how the wine is made has a large impact, also. If the same fruit is vinified completely differently, the wine will probably be completely different. Through which wine will the fruit be speaking?

"If you're asking, 'Is it important to allow a vineyard character to be perceived?' then I'd have to say that I do everything possible to preserve this in every phase of winemaking, but what I do depends on the vintage.

"It's a real swamp when we try to examine the true character of a vineyard. The true character of a vineyard is in the quality and characteristics of the fruit delivered to a winery. The winery is then a big lens through which the fruit can be viewed in multiple ways.

"What I value in characteristics that come from the vineyard are black fruits, proper tannin balance, and lack of veggie or herbaceous characters. These show up in the wine and are different from each vineyard source, whether that's George III or Vineyard X."

Portet contends that his goal is to make the four or five tanks of Cabernet Sauvignon from George III the best it can be. "Even though two tanks can originate from the same block with identical clones, every winemaker knows that they develop differently. Because we've purchased the same blocks for a number of years, we now know which ones do not react as positively to extended maceration, and we monitor this with daily tasting.

"We blend the different George III tanks each year to try and maintain a consistent style. The wine then spends between 18 to 22 months in mostly new French oak barrels. Apart from harvest, the key decision is when to press, because it significantly impacts the fruit, structure, and overall character of the wine."

Delivering

Winemakers interviewed acknowledge Steve Test's conclusion: "It's significant that a vineyard-designated wine comes from a special place, but it must deliver. The wine must be perceived by a consumer as a special, excellent, delicious, and great wine. That's the final and most important criteria for wine from a pedigreed vineyard." ■

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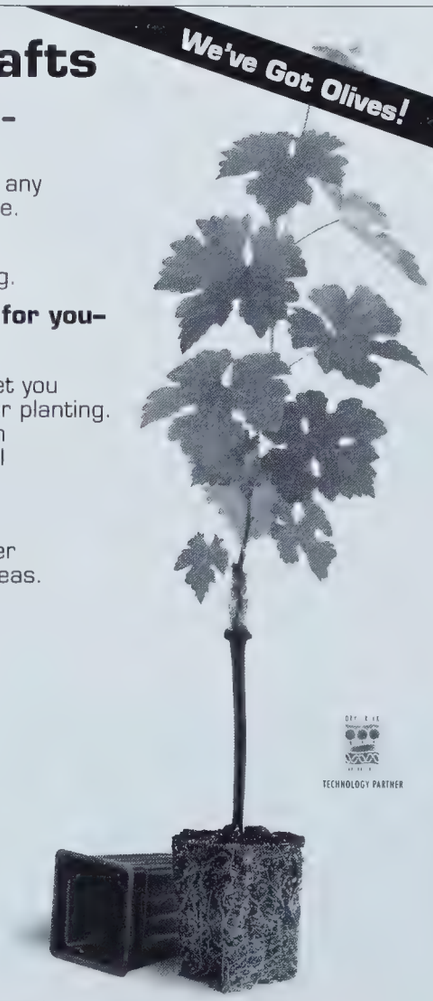

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CALIFORNIA WINE TRENDS

MKF reveals wine sales grossly underestimated

BY Jack Heeger

Anyone who has watched prices of higher quality California wines rise dramatically over the past few years realizes that these wines are in high demand and that the market for premium wines continues to increase.

But the extent to which the market has grown is a surprise, according to the report, "Wine trends: An improved view of California wine," released recently by Motto Kryla Fisher LLP (MKF), an accounting and market research firm in St. Helena, CA.

The year-long study is described by Vic Motto, principal of MKF, as a "groundbreaking landmark work" based on "the first comprehensive database of actual California winery sales to all channels, sorted by price segment, varietal, and market."

In the past, Motto notes, sales estimates were made on the basis of government tax-based shipments, but this data includes only the number of gallons shipped, offering no details on what was sold or how much it was sold for.

These estimates are supplemented with scan data; however, this data is incomplete because it covers wine sold mostly in grocery stores in only 32 metropolitan-area markets. Because it is limited geographically and because most wine sold in supermarkets falls in the under-$12 price range, "These estimates are not representative of the entire market," Motto explains. "These two sources tell us a lot, but not everything."

The idea for the study came to Motto after he talked with many winery principals who declared that they were all "doing better than average." MKF contacted 847 wineries in California, and more than 200 supplied data, including most of the large producers. It took a year to develop the database.

"Most of those who didn't participate are smaller wineries," Motto says, noting that additional data is being added constantly. "We received maybe 20 or 30 more winery responses to the request for data in the few weeks right after the study was released." However, most of the volume of wine sales is represented. Depending on the varietal, the study represents anywhere from 50% to 70% of sales, according to Motto.

"Everything we have been adding since the study was released is merely confirming what we know," Motto explains. "The data we have is representative of all price categories and representative of all segments of the market."

MKF study results

A comparison of industry estimates with the MKF study shows that 1999 sales of wine priced more than $15 per bottle grew faster than anyone had believed and that the actual volume sold had been understated by 26%. The dollar volume sold in this price range was understated even more — by 37%. Stepping up a notch, growth in the super-premium category, wine over $25, was grossly understated. The growth rate was 50% rather than the 18% reported by the industry.

However, the real significance of the underestimation is revealed when the discrepancy is translated into actual numbers. According to the MKF report, the California wine industry sold $6.2 billion of wine in 1999 (consumers paid almost $12 billion). That's as much as 250 million more bottles of wine than anyone had thought, with a total value of more than $850 million above the estimates.

Why have the industry estimates lagged so far behind this market growth? "Until now, there was no source of information like this," explains Motto. "There was no place to find hard numbers for sales of premium wine."

Motto says that the premium wine category — wine in the over $15 range — was almost nonexistent 10 years ago. "We had history to look at, but we didn't realize how fast history was changing."

Motto was surprised by the study results. "This was far different than what anyone expected. This shows how far behind the curve we are in understanding the market. We have estimated the size of the wine market for years, but we could use only estimates." He stresses that the new study uses verifiable numbers.

Why is the premium segment blossoming?

Several factors entered into producing the hitherto-unrealized gains: Wines are getting better and there are more of them; California wines are promoted more aggressively; and Americans have undergone some major cultural changes: they are enjoying a better lifestyle.

Motto calls grapes "upwardly mobile. Vineyards are replanted, we're growing better grapes, and making better wine. Even in the Central Valley, they're making more varietals than in the coastal area, and they're not finished with the transition." He predicts that Napa/Sonoma growth will continue, albeit modestly, but other areas will be "migrating" to higher levels of quality in wines produced.

More wineries are advertising and promoting their products, which helps the entire industry, and the Wine Market Council has conducted successful test marketing programs proving that increased generic promotion increases sales.

Motto points to studies that show 29 million Americans adults like and drink wine but don't drink it often: he says those people represent a market that should be targeted. "We should concentrate on our most likely market, not the most unlikely." The people in this likely market group are baby boomers. They are middle-aged, affluent, and the segment of the population that is growing the fastest in number.

Motto also says the growth in premium wines offers an opportunity for growth in the export market. "In the last 10 years, exports have accounted for 20 percent of the revenue, but for now we can sell everything we make at home. For the future, the export market is strategic." He believes that the export market offers further growth in premium wines. "Wine is associated with a region. In Japan and Europe, having 'California' or 'Napa Valley' on the label associates the wine more with a key area in the U.S."

MKF suggests that the most significant factor in the understatement of the premium market may be the aging of America's population.

People in their fifties consume 2.5 times more wine than those in their

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twenties. Motto notes that 42% of wine drinkers are baby boomers. He expects that, when the generation now in its thirties moves into its fifties, it will be one of most affluent market segments and will pick up that rate of wine consumption. "People don't have the same taste in their twenties and thirties as they do in their forties and fifties."

What does the future hold?

Motto is bullish on the future of the wine industry for several reasons:

- The growth currently seen by the industry is part of a long-term trend.
- Per capita wine consumption by adults is growing at a 12% rate, and per capita spending on wine has increased from $30 to $72 in the last 10 years.
- Development of the wine market is still in its early stages. "The industry is still getting started."
- Wineries are becoming more sophisticated in their marketing programs.
- The Baby Boomer phenomenon will continue for another 15 years.
- The cultural lifestyle trends that affect wine consumption will continue. "There's lots of interest in wine."
- The explosion of micro-wineries will continue.
- Big brands will get bigger and will drive up consumption, because they can use mass marketing techniques.
- Direct shipping is growing.

Motto predicts that any downturn in the economy will not affect wine consumption. "All documented evidence shows that wine consumption won't be affected. Despite Japan's poor economy, for example, wine exports to Japan actually went up."

In the last 25 years, through all recessions and booms, wine sales have shown a straight line increase, observes Motto. "In four recessions, it never got bumped off course." He explains that buying wine is not a big economic decision, that even in a bad economy most people are still employed. "They don't buy a cheaper cut of meat just because the economy is down," adding that buying wine is the same.

MKF expects to revise this study annually, providing complete analysis and commentary. Quarterly updates will be issued to subscribers, including the latest data based on new figures from participating wineries. ■

For additional information, contact Motto Kryla Fisher at tel: 707/963-9222, or fax: 707/963-1379.

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Helping servers "bluff" their way through wine sales

BY Mary Ross

Restaurant servers constantly amaze me with how much they know about wine. They know that wine is mankind's oldest beverage, along with water and milk. They know that modern health studies are proving what ancient cultures knew — that wine can be a healthy and fun component of daily life. They know that restaurant wine sales are booming and that selling wine is the quickest way to boost their table-check average and personal bottom line. In fact, they know much more about wine than they realize.

Trouble is, too often, they just don't know what to do about it.

I've been teaching wine sales seminars to restaurant servers throughout the Midwest for 15 years — 1,500 servers last year alone. From the beginning, I've heard several issues echoed by managers and servers in restaurant after restaurant.

Why customers don't order wine

"We sell some wine, but our customers here, they don't drink wine."

Why not? I used to ask myself. Now, I ask them. "Why not? I'm a working sommelier. I know that not every table orders wine. Why wouldn't a person order wine in a restaurant?

"It's too expensive." (Restaurateurs and winemakers take note: The consistency with which cost is the first reason cited for poor wine sales is remarkable.) Then, whether we're gathered in a temple of gastronomy, a pizza joint, or stops in between, comes the litany:

"The customer doesn't drink. He drinks, but doesn't drink wine. Wine doesn't go with the restaurant's food. The customer doesn't know what to order. The customer is pregnant, on medication, or gets headaches from wine. Wine is against their religion."

Mary Ross offers seminars to help servers boost wine sales.

Then there are safe-driving issues. There are age issues. There's negative peer pressure. Servers who work in smoking sections report that smokers don't drink wine; servers in non-smoking sections say the same about non-smokers. One gal announced that men didn't want to reveal their lack of knowledge in front of her because she's such a bombshell.

Indeed. I've experienced these reasons for poor wine sales, too (with *one* notable exception). But one reason is omitted with a consistency that's again remarkable and, to my mind, a little scary. I probe, "Anything else?"

Eventually, a voice breaks the silence: "Because nobody offers wine."

Making the offer

Nobody offers wine. As a result — even if the guest drinks, drinks wine, isn't concerned about the expense, knows what to order, and all other issues besides — the sale is dead before it's begun. Fortunately, the dead weight of a wine list can be transformed into a profit engine by enlisting skills servers already practice every day. To bring this point home, I offer three real-life scenarios:

Imagine you're seated in a restaurant with the menu. In scenario one, the server comes over and says, "How are you this evening? What'll it be?"

In scenario two, the server adds, "We've got some great specials listed inside the menu. Take a look and I'll stop back for your order."

In scenario three, the server adds "We've got some great specials listed inside the menu. My favorite is the Wild Mushroom Ravioli. The mushrooms are sautéed in a delicate garlic butter, and the homemade ravioli are really flavorful. I think they're delicious. Take a look at the menu, and I'll stop back for your order."

I ask servers which scenario sells more Wild Mushroom Ravioli. There's never disagreement. Anybody who has ever sold anything knows that a recommendation from a confident sales-

person can be the most important influencer. When asked to pitch their favorite menu item, servers make my mouth water. But when it comes to wine, we often don't even get to "What'll it be?" Why not?

Too busy to sell wine

"We get very busy here. I don't have much time to be talking about wine." That's the restaurant business: short one busboy, customers waiting for seating backed out the door, the chef screaming "Pick up!" Of course, servers don't have much time to talk about wine.

The good news is that guests don't want to spend much time talking about wine, either; but they do need a little help. In the wine industry, we know this. Servers know it, too. They just need a reminder: "What is the most basic information people want to know about wine," I ask. "What, for instance, do you want to know about it?"

The first two answers are always quick and fairly unanimous: "What does it taste like?" and "What kind of food will it be good with?"

Uncovering the third, most important piece of information may take prodding. Someone ventures, "Region?" or "Year?" to general dissent. Then someone suggests, "Price?" Luckily for me, there is always one server to argue against price as a prime obstacle to wine sales (and it's no coincidence that this server invariably earns the most money). I know they have the answer, so I offer another real-life scenario:

"Imagine I'm a guest in your station looking at the menu. You come over to take my order. I say, 'Gee, Pasta con Pesto or Wild Mushroom Ravioli?' Then I look at you and ask a question. Do I ask 'How much is it?' or 'Where did the mushrooms grow?'" General laughter tells me to press on. "So, what's the question?"

The group speaks in one voice: "Which one do you recommend?"

"If you recommend the Wild Mushroom Ravioli, don't people order it?" Again, general agreement. So, within this simple framework of "What does it taste like?" "What kind of food does it go with?" and "Which one do you recommend?" we apply the food-selling skills that servers already have to wine sales.

Taking a soft-sell approach

"But I don't want to be pushy." Interesting. Servers haul trays loaded with mouth-watering desserts to wave under the guest's nose, but recommending wine is pushy. So, to make wine non-pushy, we practice service-oriented, soft-sell table openers:

From one server: "If you'd like to start off with wine, we have a light, dry Pinot Grigio that's wonderful with all our appetizers."

From another: "May I recommend one of our specialty teas or coffees? Or, if you're a wine drinker, we've got a Merlot that's

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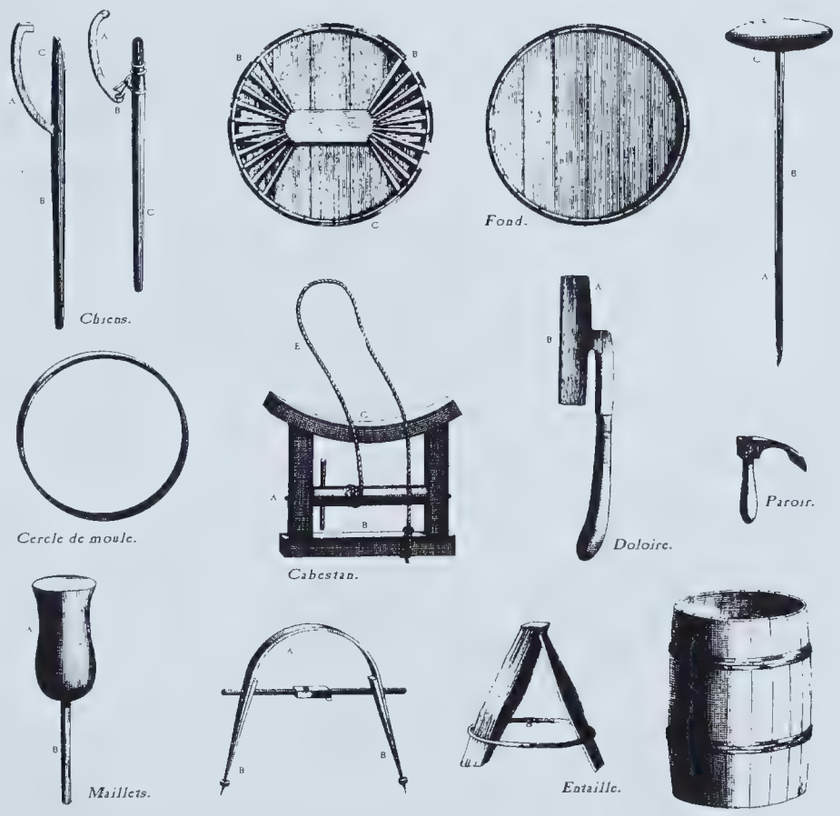

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My personal favorite: "We've got a wonderful wine selection here at Cafe Mary. I'm happy to point out a few of my favorites if you'd like." (Funny. In 15 years, no guest has said, "Go away. I don't want your help.")

Discovering what customers want

"How do I know what my guests will like?" servers often wonder. The easiest way is to ask them. The beauty of the soft-sell opener is its natural segue to a can't-say-no question, such as "What kind of wine do you generally prefer? White or red? Dry or sweet? Light or rich?"

"But I've never tasted wine. I don't know what it tastes like." Then we taste a Pinot Grigio, and the same server's face puckers up like he's sucking a lemon. To put that puckery face into words that both the server and the guest will understand, we practice a simple, real-life vocabulary:

"Does this Pinot Grigio taste tart, like a lemon; smooth and rich, like butter; or peppery, like a grind from the pepper mill?" The unanimous answer: "Like a lemon."

"So what dishes always come out of your kitchen with lemon?" Now, servers are eager to be the experts. If we're in a seafood house, "Oysters, clams, shrimp ..."; in a health food cafe, "Nine Veggie Salad ..."; in a trattoria "Chicken Limoni." All are divine with Pinot Grigio. With a Chardonnay that all agree is "buttery": "Sautéed Polenta with Porcini Mushrooms, lobster ...."

What servers need to know

"But we've got 10 Chardonnays on our list. What's the difference?" One answer: About $20. A better answer:

"Four simple variables make all wine the same and each wine unique. These variables make wine look the way it does, smell the way it does, taste the way it does. You know what they are, so tell me."

It takes most groups about two minutes to offer grape, soil, climate, and process, (the last of which I amend to 'culture'). "What is the most important variable?" We know it and they know it: the grape.

To clarify the nuances of modern enology, I pick two objects: "What color is this guy's baseball cap?" "Blue," comes the response. "What color is my jacket?" The response, "Navy blue." "Both blue, but different blues.

"In the same way that blue always looks like blue, Sauvignon Blanc always tastes like Sauvignon Blanc, Riesling always tastes like Riesling, and so on. To learn the difference between two Sauvignon Blancs, look at the difference in factors that influence the grape, which are ...?" "Different soil, climate, and process!" (again amended to 'culture').

To head off the anxiety of "We have 50 wines on our list! How can I learn all that?" I ask servers to identify five basic wine types: a light, dry white (like Pinot Grigio); a rich dry white (Chardonnay);

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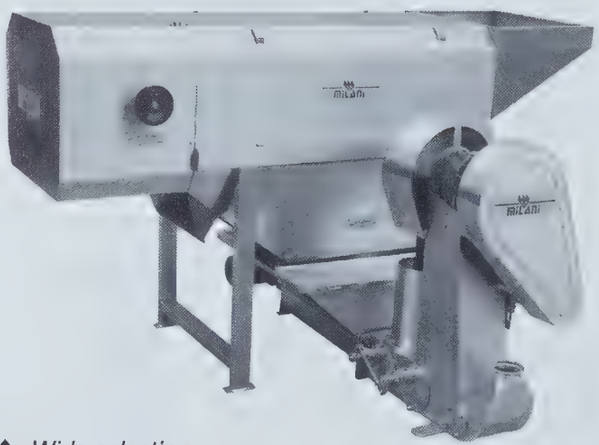

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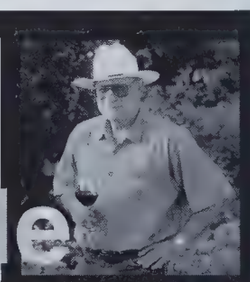

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"What if a guest asks me a question?" Rarely can a server really recall being asked a question, but it's a valid concern. After a refresher of grape, soil, climate, and culture, I reveal the sure-fire fix that's saved me from several sticky situations: Read the back label.

A success story

Selling wine tableside is not easy. We haven't touched such obstacles as confusion about tartrates, ("Great! These crystals show what a natural, unadulterated wine this is!"), returns, or how to get wine out of the container it came in. Still, 15 years in the wine sales training game tells me that the biggest obstacle to wine sales is the server's mindset, "I don't know how, I don't understand, I can't."

Fortunately, they do know how, they do understand, and they can. They just need encouragement. It's lucky that the best encouragement comes in the form of a rapidly building tip income.

Of all the sommeliers and all the restaurants I've worked with, the most telling testimonial came from Susan, a server at a mid-priced hotel near Chicago's O'Hare Airport. "I'm a single mom," she said. "I need money. I don't drink, but if wine can make me more money, I'll do what you say." By the end of our "How to Bluff Your Way Through Wine Sales" seminar, she'd developed a table opener and easy descriptions of six wines, including house selections.

Susan called a week later. "Forget these house wines," she laughed. "The premium wines taste better, and people drink more bottles. Also, guests are so happy that I'm giving special service, I get a bigger tip."

A year later, she called again. "I've doubled my income, but not all the increase is from wine. I just apply the same techniques to call drinks, desserts, anything that builds my check. I've cut back to three shifts and spend the other nights with my daughter."

Fortunately for us, there are plenty of Susans out there. They have the goals and the tools. What we can do is channel their skills to achieve those goals with wine sales and then, stand back. They'll take care of the rest. ■

Mary Ross directs media and market development for Chicago's Romano Bros. Beverage Co., one the nation's largest distributors of wine and spirits. Her educational programs include in-house training for the Romano team, consumer events, and on-premise seminars including "How to Bluff Your Way Through Wine Sales," "Tell It to Sell It," and "Menu-tique."

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PART II

INSIGHTS INTO BETTER TASTING ROOMS

Training, motivating, and keeping superior staff

BY Craig Root

When building a tasting room crew, I prefer a staffing system that includes a manager, some full-timers (depending on the size and attendance of your tasting room), and a pool of part-timers (see Part I of this series, *PWV.* Jan/Feb 2001). This system insures less burnout because part-timers are fresh. It also gives more flexibility, so the staff can switch days with each other, and managers don't have to come in on their days off when someone is sick.

Another school of thought suggests that an all full-time staff is preferable, because the staff is more motivated and informed about the winery on a daily basis. My response is that the system that works best is the one the manager wants to use. Both systems have their challenges. If the manager doesn't like the system, he/she is less inclined to make it work.

Whichever system top management chooses, the techniques to achieve a profitable and friendly staff are basically the same:

1. Staff pay: That old line, "When you pay peanuts, you get monkeys," is applicable here. In working throughout the U.S., I often find that tasting room staff are underpaid.

Ask yourself this question: If my tasting room were one of my distributors, how would it rank in terms of cases sold and profits (especially since the tasting room is returning full retail)? In many cases, you'll find your tasting room is among your winery's top five or 10 distributors. This is a compelling reason to justify paying competitive wages. (I discussed this topic in Part I, and I'm going to keep discussing it until wineries wake up and pay their tasting room staff wages commensurate with the importance of the job.)

Survey other tasting rooms in your area to insure that your wages are on par or higher. I do many tasting room start-ups, and the associated tasks include design review with the architect, creation of a business plan, and income/expense projections. This last assignment makes me keenly aware of what a significant part of the expense picture wages and salaries are.

However, employees in your tasting room are personal ambassadors for your winery. They must be bright, articulate, sales-oriented, properly dressed, willing to work weekends and holidays (and even evenings), able to give tours, and relate to the trade, and much more, under conditions as stressful as a busy restaurant — *with no tips.* This is no place to be skimping on wages. A good staff will more than pay for itself in terms of profits and great PR for your winery.

2. Staff size: I also frequently see understaffing, a practice which costs considerably more than extra staff pay in terms of sales lost because the harried staff can't keep up. Understaffing also contributes to high turnover, which is overlooked as a morale killer. A revolving door employment situation creates a very unpleasant work environment and is a nightmare for your manager.

If you supervise the tasting room manager, one way to tell if you're understaffed is to work the floor yourself on busy days. If the work force is obviously understaffed even with you as an extra person, hire more staff immediately.

Use the extra staff and then quantify your sales for that period. You will find that the extra staffing more than pays for itself. By the way, you may be saying to yourself: I'm a top manager, and I'm too busy to work a day in the tasting room. To which I respond again: If your tasting room were a top distributor, where would it rank? Wouldn't you find the time for your fifth biggest distributor?

3. Staggering shifts: Chances are you don't need the entire staff to come in at 9 AM. Have enough staff come in to open at 9 AM as needed and then schedule one or more to arrive at 11 AM — which allows you to save money.

4. Incentives: In most incentive scenarios, the employee doesn't get the incentive unless the winery is making five to 20 times the incentive in increased revenue — truly a win-win situation.

I like to offer daily — as opposed to monthly — incentives for the staff. This avoids the following dilemna: Employee B gets the incentive and A doesn't, though employee A worked 80 hours this month and employee B worked 60 hours. Employee A was on weekdays (slower pace), and employee B was on weekends (faster pace). The daily incentive rewards the people who endured that particular day's difficulties (such as being short-staffed because someone called in sick when two buses appeared unexpectedly).

Another tip: offer the incentive in the form of credits in your retail area. This practice encourages staff to relate to your non-wine items. They might pass up that upscale balsamic vinegar with their own money, but they will buy it with their store credits. More important, they will do a better job of selling the vinegar after they have successfully used it in their own kitchens. The incentive credits in the store generally are not at the employee discount, but rather at a straight dollar-for-dollar retail cost.

5. Training: Staff training is an area often overlooked by top management. I recently worked on a start-up of a regional tasting room that operates as a non-profit and uses some volunteer help. Monterey Bay Aquarium, one of the largest and most prestigious aquariums in the world, also uses a large group of volunteer staff. In surveying these volunteers, I learned there are three main reasons they are willing to work for free: flexible hours, the discount in the retail shop, and initial and ongoing training and education.

If this training is enough to motivate people to work for free, imagine what it does for a paid staff!

Staff member training often consists of "shadowing" a senior staff person around. This technique is good for some training, but inadequate in the big picture.

Staff training should be both written and verbal and delivered at least every quarter. The new staff person should be given a binder that includes his/her job description, dress code, tour outline, wine and winery notes, and other pertinent information. Notes from ongoing training can then be added in an organized fashion.

Ongoing training can consist of wine tastings with your winemaking team, vineyard and/or viticultural seminars, wine and food pairings, blind tastings of your wines compared with those of your competition, and field trips to other tasting rooms. The possible topics are endless; the results are priceless.

6. Keep morale high: I mentioned that flexible hours and retail store discounts are motivating tools at the Monterey Bay Aquarium; these are two important ways to keep your staff morale high. If the part-time employee is a homemaker and needs to occasionally leave at 4PM to pick up her children, let her. If the senior citizen wants to take a two-week cruise in the slow season, let him.

Make sure that you offer a good discount in your retail store. The discount is usually lower than your markup, so you are still turning a profit.

7. Cross-train and rotate staff: Working in the tasting room can be tedious. How many times can an intelligent person pour and describe the same five or six wines over and over without some burnout? If your tasting room is large enough, be sure to cross-train and rotate. Each staff member should work two hours as a pourer, two hours at the cash register, and another two hours as a greeter or tour guide or floater who assists wherever necessary.

I realize that many tasting rooms are too small for this practice, but anything you can do to alleviate boredom is helpful. It may be that one person is good at writing: put him/her to work on your newsletter or wine club bulletins. Maybe someone likes shipping and doesn't mind working in the stockroom one day per week. Try to add variety, particularly if you have an all full-time staff.

8. Create a sense of fun: Anything management can do to improve morale and reduce turnover is very important. Here are some techniques:

- Celebrate everyone's birthday with a cake. This doesn't always have to occur on the actual birthday.

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• Offer outside activities, such as potluck dinners outside the winery. In my experience, people talk shop half the time — which is generally good for morale. Take the staff out to dinner or to a concert or play.

Here's a tip: As a manager, I used to take my staff out to dinner in early November to reward all of us for making it through the busy season. But all the camaraderie and good will generated by these events was wasted as we headed into the slow season. I learned that it is best to offer these events in September. By offering them in mid-September, the good will helped carry us through the end of the busy season when we needed it most.

• Establish a small budget to bring in bread and cheese, bagels with cream cheese, or pastries occasionally. These treats are always appreciated.

• Play games. The person who correctly guesses the daily gross or the head count at the beginning of the day gets a nice prize.

Remember, you're not just selling wine in your tasting room; you're also selling memories. A great staff sells wines and great memories. ■

Craig Root is a 29-year veteran of the wine and hospitality business, including 15 years at Beaulieu Vineyard. He has worked in all capacities at hospitality centers, primarily as manager. For the past nine years, he has served as a consultant for visitor centers through his own company, Craig Root & Associates.

Please look for future articles in this series. If you have comments or suggestions, feel free to call Craig: 707/963-7589, or visit his web-site: winesoftware.com/croot

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2001 PACK EXPO

ON THE CUTTING EDGE OF PACKAGING TECHNOLOGY

Winery managers are increasingly turning up at packaging trade shows to discover the newest, most efficient technologies available to reduce costs of bottling and packing wine. For example, Fetzer Vineyards (Hopland, CA) will have bottling staff on the lookout for new equipment at Pack Expo Las Vegas, 2001, September 10–12 at the Sands Expo and Convention Center.

Pack Expo Las Vegas, a biannual packaging industry trade show with 490,000 square feet of exhibit space, expects to attract 17,000 attendees and 620 exhibitors. Pack Expo is produced by the Packaging Machinery Manufacturers Institute (PMMI), a trade association with 491 members that manufacture packaging and packaging-related converting machinery in the U.S. and Canada.

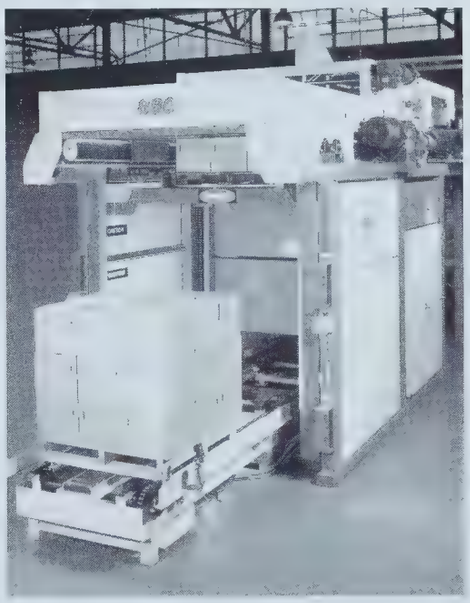
Fetzer's seven-member team, including bottling manager Sean Bennett, will include representatives from six departments: bottling, purchasing, equipment engineering, quality control, maintenance, and warehousing.

"Pack Expo gives us a unique opportunity to review advanced technologies from leading original equipment manufacturers in one location," Bennett says. "Also, we are able to preview actual machinery demonstrations with technical experts on-site, who can answer our specific questions. That kind of hands-on preview is very difficult to come by in any other setting."

As an example of the real-world benefits that can result from such trade show attendance, Bennett points to Fetzer's experience at the 1999 Pack Expo Las Vegas. He and the plant engineer and bottling maintenance manager identified and later purchased two automated palletizers. The units, from Alvey Systems in St. Louis, MO, efficiently accept cases of wine from more than one packaging line and then automatically place them on pallets.

The Alvey units have delivered on a promise to substantially reduce costs by palletizing cases faster and more efficiently than they could ever be handled manually.

Fetzer's previous palletizing units were unable to manage the different box styles and sizes required for the more than 18 types of wine produced by this large-volume Mendocino County winery. Valuable man-hours were wasted by manually stacking cases. Since their installation in 2001, the Alvey units have freed workers to use their time more productively.



Fetzer bought two automated Alvey palletizers after seeing one demonstrated at Pack Expo 1999.

Bennett reports that the palletizers not only support existing capacity, they will provide the speeds and flexibility for future growth.

PACK EXPO® 2001 LAS VEGAS

"We are always looking at ways to handle our products more efficiently and cost effectively. At our current rate of growth, a higher speed bottling line may be in our immediate future and this equipment will support that growth."

The system will handle the full range of Fetzer boxes, including the longer and taller cases that originally required manual stacking. The new system combines pallets tightly and uniformly, improving distribution and shipping efficiencies.

This year at Pack Expo, Bennett's strategy is to assign each member of the team to a different area of investigation. As always, potential return on investment will be the prime criterion as the team members assemble periodically throughout the show to review their findings and consider purchasing decisions.

Bennett himself will look at revamping two of the winery's three existing packaging lines to increase BPM (bottles per minute) efficiency. The whole team will shop for new ideas and trends in packaging among the 950-plus booths of companies, exhibiting the latest in packaging machinery, systems, and technology.

Some 40 companies from the beverage industry and 75 material handling companies are among the 620 companies registered as exhibitors.

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Grappling with terroir realities—

Challenge for Russian River Valley Chardonnay

BY Eleanor & Ray Heald
Contributing editors

American Viticultural Areas (AVAs) are still in their infancy. In France, appellations, steeped in the importance of *terroir*, are part of a wine's regional tradition. Winegrowers in California's Russian River Valley viticultural area consider regionality increasingly important — as an asset distinguishing their wines and, potentially, as an important marketing tool.

"In the near future, when consumers think of Russian River Valley wines," Joseph Swan Vineyards winemaker Rod Berglund predicts, "they will identify them with the region's best — sparkling wine, Chardonnay, and Pinot Noir. They will have a flavor profile of that wine region in mind — one that is markedly different from the flavor profiles of any other viticultural area."

Since two-thirds of the Russian River Valley's 10,000 vineyard acres are planted to Chardonnay, ***PWV*** asked winemakers in the region to discuss the significance of Berglund's remarks for this variety. In the process, they reveal how different soil conditions, clonal choices, fog intrusion, and varying techniques used to create winemaker wines or vineyard designates impact distinctive regionality for Chardonnay.

Significant terroir *factors*

Among essential aspects, the notion of *terroir* embodies a unique combination of soil, climate, rainfall, marine influence, vineyard altitude, steepness, and exposition. In the Russian River Valley viticultural area (approximately 150 square miles roughly between the towns of Santa Rosa and Healdsburg in Sonoma County), soils are extremely diverse.

J. Wine Company's winemaker Oded Shakked notes that, in the Russian River Valley, there are "more soil types than in all of France." Soils differ not only in composition, but in depth from vineyard to vineyard. As such, soil has less influence on wine character than climate.

General coolness of the Russian River Valley traditionally classifies it as Region I. When the region is evaluated by a modern system of measuring the number of hours per day that vines are exposed to temperatures between 70º and 90ºF, a distinctive pattern of daytime heating and night-time cooling marks it as "coastal cool."

Fog is the most important aspect defining Russian River Valley *terroir*. During the growing season, including 115 to 120 days from fruit set to harvest, the daily cycle of fog intrusion and evaporation maintains a mean temperature of 66ºF. Typically, harvest in the Russian River Valley is 10 to 14 days later than in bordering AVAs.

Therefore, the Russian River Valley viticultural area favors early-ripening varieties, such as Chardonnay and Pinot Noir. Slower maturation concentrates fruit characters without the loss of natural acidity, fostering wines with balance and depth potential.

Comparing winemaker wines and terroir

Sonoma-Cutrer's winemaker Terry Adams finds it appropriate to discuss Chardonnay, often referred to as a winemaker's wine, in comparison to characters developed within a given *terroir*. "At Sonoma-Cutrer," explains Adams, "we make wines that we believe express the character of the various vineyard designations we bottle.

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"Comparing our Sonoma Valley Les Pierres bottling to the Cutrer Russian River Valley Chardonnay, one notices that the Russian River wine has more tropical fruit elements and exotic flavors. The basic apple, pear, and citrus are there, but there are more pineapple, mango, and guava — a multiplicity of fruit characters that Chardonnay doesn't develop in warmer regions.

"Sonoma Valley is more extreme, warmer mid-day and cooler at night, and the soils are different. Les Pierres is more austere with mineral components and lemon-citrus with green apple flavors, but not the fruit basket that develops in the Russian River."

Dan Goldfield, winemaker at Dutton-Goldfield Winery objects to the concept of a winemaker's wine. "Chardonnay," he notes, "is a flexible wine, in that lower quality vineyards can be satisfactory. If Pinot Noir grapes are average, there's little a winemaker can do with them. With any varietal, I try to showcase the high notes of a particular vineyard, but Chardonnay is a lot more forgiving if the vineyard is not that great."

In the Russian River, and particularly Green Valley, Goldfield-Dutton sources fruit that is citrusy with a higher acid profile. It offers the opportunity to do lees stirring and retain the wine on the lees, creating better balance and richness.

"What distinguishes the best of Russian River fruit," Goldfield continues, "is that the *terroir* offers a vast array of characteristics stemming from fruit intensity, which is built in by long hang time."

Berglund notes that one strength of Russian River *terroir* is the combination of overall lower pH and higher acidity (average 3.2 pH for mature fruit). "The tools a winemaker needs to bring Russian River Chardonnays into balance are different than those needed in other areas. MLF is a given with most vineyards."

Lynmar's vineyard manager Kevin Koebsell maintains that the variability that occurs among fruit stems from the clonal selections planted in various vineyards within the viticultural area. "Because 100% of the vineyard is Rued Clone, Lynmar's situation is unique," he says. "It gives us Muscat and Gewurztraminer elements that increase the fruitiness of the wine. We need to balance this through MLF and extended *sur lies* ageing for richness."

To achieve more paints on his palette for blending, Shakked works with four different Chardonnay clones in five different vineyard sites. "This results in about 20 different lots because various parts of the same block behave differently, not only due to the clone, but to variation in soil. When rootstocks are considered, there are even more permutations."

Adams sums up by noting that all the varying elements complement each other to create a harmonious Russian

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River Valley-style Chardonnay. Due to factors stemming from climatic variations, this style would be more easily understood if the larger viticultural area was further sub-divided into at least four sub-appellations: Green Valley, mid-region Russian River Valley, Laguna Ridge, and on the east, Santa Rosa plain.

If these subdivisions were made, he contends, "Then, generalization about soil types, aspects of the sun, and whether the vineyard is hillside or flat would be more meaningful. Over a long time, that's what happened in Burgundy. But nowhere in the world is there a wine region like Russian River Valley where the overall climate changes so much in such short distances. It's all related to the fog."

California translation of terroir

"We've taken on a difficult philosophical question about *terroir* and what the Russian River brings to the party," Rodney Strong Vineyards winemaker Rick Sayre continues. "I work with one Chardonnay vineyard in the viticultural area where the bench is volcanic ash, the hillside is red clay, and the bottom is gravel extending to the river's edge, all within one-half mile. I get three distinctly different Chardonnays. When rootstocks and clones enter the mix, what does this say about *terroir*?"

Shakked notes that in California, the definition of *terroir* is not the same as used in Europe. "*Terroir* should not limit us to the aspects of soil and

Portrait of the Artist's Mother (detail) by Albrecht Dürer dated 1514.

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microclimate only," he stresses. "I think the owner and winemaker's influence enter in."

For more than 15 years, Marimar Torres Estate's technical director Bill Dyer has been tasting with a winemakers' group focused on the wines of the Burgundy region. "We've grappled with the controversy between *terroir* and producer effects. Very often in a given tasting, we'll taste the wines from two producers in the same appellation, and we'll have two wines from the same producer but from different appellations.

"What we've discovered is that producer effects are stronger than so-called *terroir*. That's not to deny that there are *terroir* factors identified in the wines. Translating to this discussion, while it is valid to speak of a Russian River Valley *terroir* revealed in a wine with rather broad strokes, the wine style is still determined by the winemaker's techniques."

DeLoach Vineyards manager Chris Kangas agrees. "That totally gets to the point. It's not so much that one can say it tastes like this or that; there's a level of wine personality that a grower and winemaker can elicit from Russian River vineyards that few other places offer — whether that's citrus or green apple or the tropical characters from the Rued Clone. Russian River Valley offers growers the opportunity to achieve intensity that brings out similar wine personalities."

Respecting clonal differences through farming

Sonoma-Cutrer's vineyard manager Kirk Lokka says that each clone or selection has its own growth characteristics. The large clusters of UCD-Clone 4 require significant sunlight. Balancing the crop and canopy toward this effort is the major consideration.

On the other end of the spectrum is Clone 15 with small, loose clusters that do not tend to rot. These vines do not need as much sunlight exposure and are not leafed. Each clone offers a different flavor.

"Rootstocks are also giving us significant variations in growth patterns," Lokka explains. "We are selecting rootstocks to control vigor for each one of Sonoma-Cutrer's vineyard sites. The 180-acre Cutrer Vineyard is divided into 24 different blocks based on the way vines, clones, rootstocks, and endless combinations are controlled."

Four different trellis systems (open-lyre, two-wire vertical, VSP, and GDC) have been used in the Cutrer Vineyard depending on soil, clone, rootstock, and ultimate vigor. Lokka dislikes GDC most because it acts like an umbrella, trapping humidity.

Russian River Valley gets fog but little wind, creating a significant difference between it and the windy Carneros AVA, for example. As a result, there's little sunlight until about

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10 AM. To counter this, the GDC will be retrofitted to a preferred vertical system. "Actually, all the vines will eventually end up VSP," Lokka admits. "It offers the best air circulation and easy control of crop load. In most parcels, if we correct vigor with rootstock, we won't need a lyre system. I'm trying to farm so that we only need to hedge once, or at most twice, during the growing season.

"Many vineyards in the Russian River Valley cannot utilize close-spacing (meter x meter). It works fine if there's a limited root zone and no more than 24 inches of top soil with a limiting layer of rock below it, but on the flat in the Russian River Valley, soils are 20-feet deep and more."

In deep soils, Lokka does not irrigate or fertilize. To slow growth, vines are cropped heavily early on, then green harvested in early July. Cover crops are used in all parcels to create vine competition and help dry the vineyard after the fog lifts or post rain in early or late season.

To ensure equal sunlight on both sides of the vine, Sonoma-Cutrer's Russian River Valley vineyards are not planted north-south or east-west, but rather angled (207º off true north) based on when fog develops and evaporates.

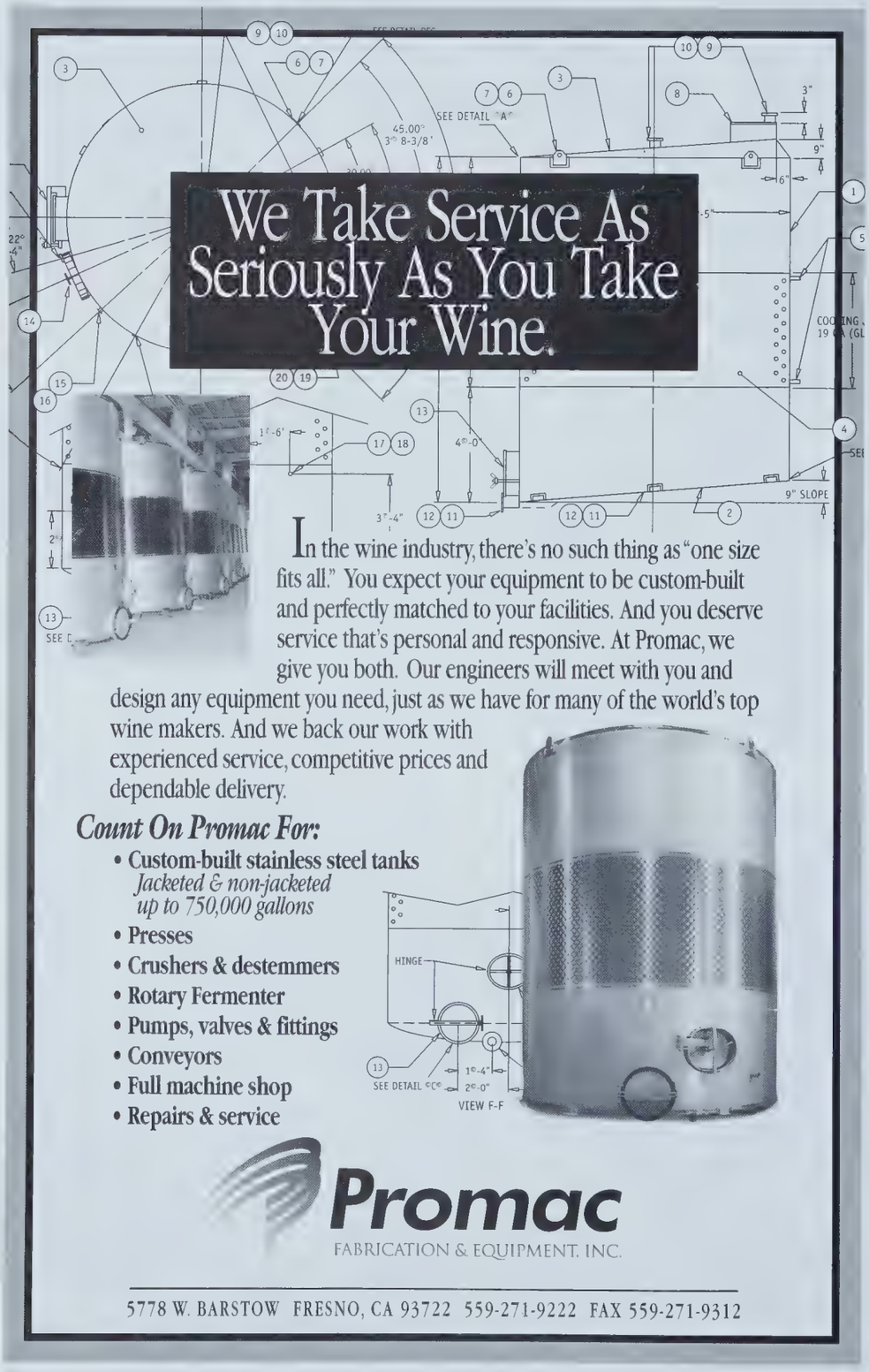
The flat portion of the Cutrer Vineyard has consistent soil composition, and Lokka controls vigorous clones with 420-A or 101-14 rootstock. Independent of clone, he uses 3309 and 110-R rootstocks on hillside, irrigated parcels with shallow, limited soils. He maintains that dry farming on shallow soils is next to impossible.

Deep soil problems are not encountered at DeLoach. Kangas notes that most parcels are 18 inches to no more than 36 inches deep. Composition is Huachica loam with a large percentage of sand. Existing vineyards are UCD Clones 4 and 5, which require significant leaf removal, and also the Wente Clone with variable-size berries on loose clusters.

Most of Lynmar's Rued Clone Chardonnay vines are 30 years old on St. George rootstock; one block remains on AXR-1. Since St. George rootstock is a nitrogen scavenger, fertilization and irrigation regimes receive close monitoring. Lynmar is satisfied with newer plantings of Dijon Clones 95 and 15 on a VSP trellis. Depending on vine vigor, hedging is done once or twice per season.

Aspect and flavor maturity

Lynmar's rolling vineyard, where the largest block is seven acres, has vine rows planted generally east-west, but with significant variability. The same vine row may provide some vines a true west exposure, but then over a hump, the exposure is directly east, which requires picking at a different time.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In a hot year or heat spell during harvest, bunches with western exposure desiccate easily and require earlier picking than the opposite side of the vine. Each side of the vine, therefore, produces different flavors. In north-south rows, the south side is often picked first, based on flavor development. This translates to multiple picking passes during a given harvest.

Shakked acknowledges that in warmer years, in a 60-acre south-facing vineyard with a divided canopy, he has also picked one side of the vines only and returned to pick the opposite side later.

Goldfield notes that such cases are typical for rolling hillside locations in the Russian River Valley, particularly near Occidental. To achieve optimal ripeness, managing small blocks, and picking parameters are essential.

See, Rued, and Spring Mountain Clones of Chardonnay are planted at Marimar Torres Estate. Since the vines are in the part of the vineyard with the most consistent soil, they are planted at high-density (1m x 2m at 2,000 vines/acre), cordon-pruned with a vertical canopy, and for the last six years, have been dry-farmed.

All three clones, although they behave somewhat differently, require leaf removal. The Spring Mountain vines have significant leaf-roll virus and are harvested with mature flavors at lower sugars.

To simplify farming, Berglund removed some Chardonnay vines and currently makes the wine from one block of old Wente Clone that, over time, consistently gives the best flavors and balance. Due to aspect, vertical shoot-positioned vines (planted 6x10 and 6x12) are oriented north-south as well as east-west. Vigor has never been a problem, and picking is based on lemony and mineral-note flavor maturity.

Berglund has also made Chardonnay from purchased fruit, Dijon Clone 76. He notes that the flavor profile is dramatically different. But he questions whether it is a result of the clone or the site, which has deep soils. "Relative to the site, the clone is driving low yields with tropical, floral, and exotic perfumes," he reports.

Rodney Strong Vineyards owns five vineyards in the Russian River Valley and has long-term contracts with 20 growers. Sayre's focus in the discussion is a wine from the 35-year-old Wente Clone on St. George rootstock in the "Chalk Hill" vineyard. The soil is nearly identical to that at DeLoach (Huachica, volcanic ash, and clay loam). While the clone on this well-drained site exhibits a slight Rued and Spring Mountain Clone Muscat character, it is more minerally.

To achieve complexity in the wine, the 100-acre vineyard is picked at two different times. Based on 21 years of experience with the site, Sayre knows that when fruit reaches 21º Brix, it will be 24º Brix in one week. Picking starts at 21.5º Brix and completes at 24º or 24.5º Brix.

As replanting occurs, Lokka believes that Russian River Valley Chardonnay styles will necessarily change. "In the past when every grower planted UCD Clone 108 (Clone 4 or 5 now), there were more similarities," he explains. "With the introduction of Dijon Clones in some vineyards, I believe the style has already changed to some degree.

"Not everyone is choosing Dijon Clones, and Sonoma-Cutrer has chosen not to plant certain Dijon Clones. In the main, they seem to have high pH and are preferred in the coolest of California wine regions. Clone 96 matures at higher sugars and then high alcohol is a problem. Each clone has its own complexity, but regardless, vineyard site and regional characters will remain dominant factors.

"Because replantings involve multiple clones and rootstocks, overall, Chardonnay wines will be more complex. When it comes to quality, we get that from older vines (15 years and more), no matter which clone."

Picking parameters

Adams speaks for his colleagues in stating that picking decisions are based on achieving maximum complexity

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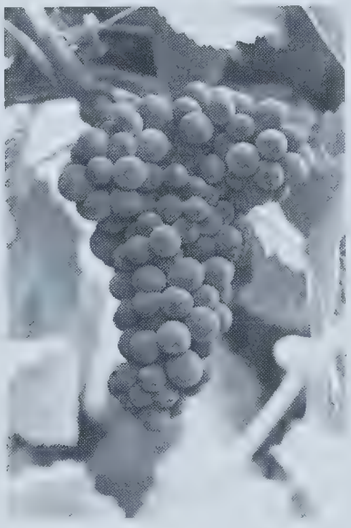

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"Analogous to the compunction to check the stock market or one's weight daily, most winemakers want to follow Brix, TA, and pH," Dyer adds. "But in the Russian River Valley, it is especially important to avoid green, unripe characters. Anyone who grows tomatoes knows they have to look, taste, and even feel a certain way to be truly ripe and flavorful. Harvesting grapes is not so different. The numbers only help us anticipate maturity."

"Picking parameters vary from site to site," Goldfield contends. "Yet, Russian River Valley enjoys the climatic advantage of not blowing past the sugar parameter where alcohols are off the charts. Acids retain balance, and we can pick based on flavors."

Berglund adds that winemakers each have their own idea of what that flavor should be for their style of wine, and none of them are wrong.

Cellar individuality

Whole-cluster pressing is the norm for the majority of producers interviewed. Preferring the complexity offered when about 25% of the juice has skin contact, Sayre deliberately whole cluster presses only 75% of the fruit for reserve lots. DeLoach does not yet enjoy the capability of whole-cluster pressing.

Relative to crushed fruit, Adams suggests that whole-cluster pressing achieves relatively clean juice and settling is essentially unnecessary. Yet, and common to white Burgundy producers, Adams settles juice eight to 12 hours to attain must that is less than 0.5% solids before transfer to barrel for fermentation.

In order to produce a food-friendly Chardonnay style, J. Wine Company chose to barrel-ferment only one-third of its Chardonnay (Clone 76 and See Clone), principally in two-year-old French cooperage, allowing only that portion to undergo MLF.

The stainless steel-fermented fraction is aged post-fermentation in neutral oak cooperage until time of blending, about 15 months from harvest.

From its first vintage in the 1980s, Marimar Torres Estate established a "house" style, using traditional Burgundian techniques of barrel fermentation in one-third new French oak, stirring twice monthly until MLF completes, and extended lees contact for eight to nine months.

"Recently," explains Dyer, "we have tried a technique in which we explore the limits of lees contact for barrel-fermented Chardonnay. When racking our 1998 wine from barrels for bottling, we saved lees which were added to 12 selected barrels, essentially doubling the quantity of lees. These barrels were then given additional ageing, and bottled after 20 months in the same barrels.

"The texture of this wine is definitely silkier," Dyer maintains. "When released, the wine label will carry the distinction 'Dobles Lias.'"

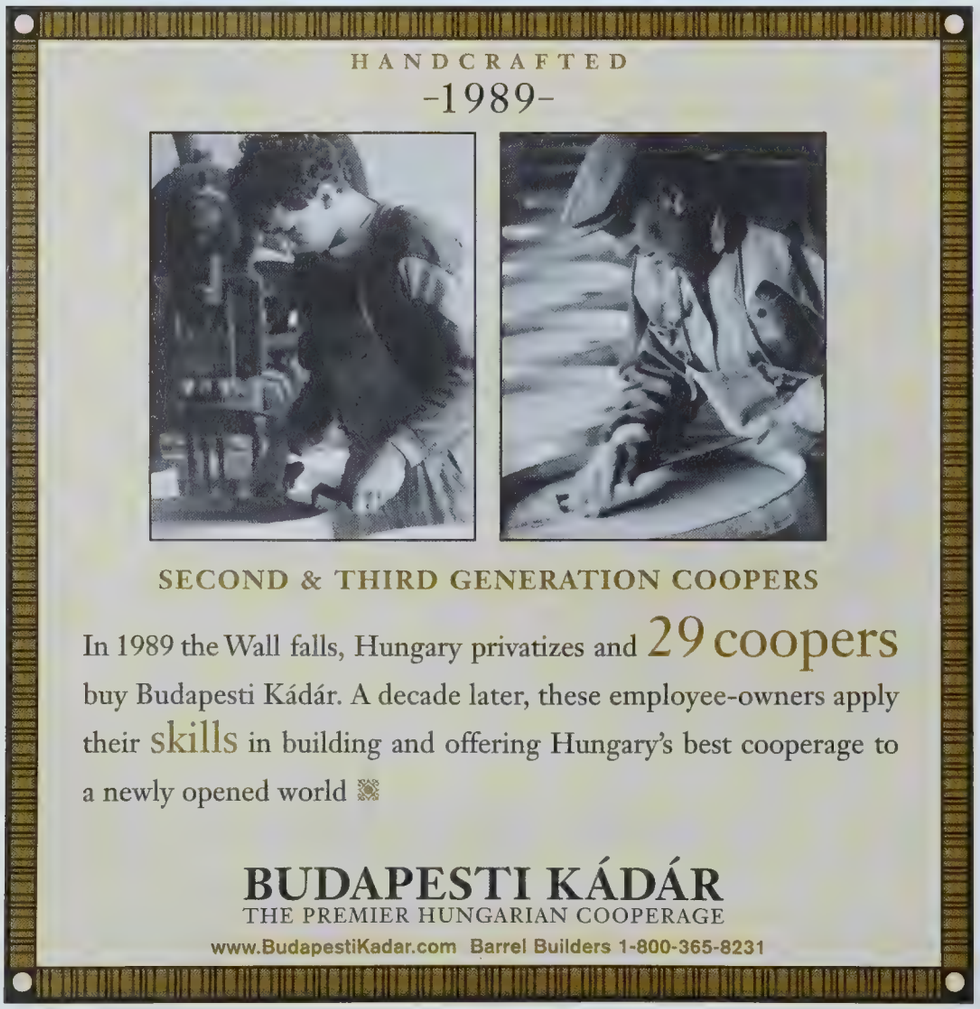
Dyer notes that such techniques may seem heavy handed for fruit grown in some regions, but in the Russian River Valley, there is so much fruit intensity, especially in such aromatic clones as Rued, Spring Mountain, and See, that Chardonnay can stand up to rather stylized winemaking.

Adams agrees with Dyer, but does not agree with the concept that stainless steel fermentation produces more fruit flavors than barrel fermentation peaking at 70ºF or occasionally as high as 80ºF.

Currently, winemakers are less concerned about higher peak temperatures during barrel fermentation. Use of barrels with lees stirring allows a winemaker to open up the wine for better expression of aromas and flavors. After attaining a hot peak, temperature tails off quickly to complete fermentation before the start of MLF.

If the aim is to bottle a barrel-fermented, unfined, and unfiltered Chardonnay with a pH of about 3.2, a peak fermentation temperature below 70ºF runs the risk of a stuck fermentation.

"Again, this is vineyard specific," Goldfield adds. "If one is working with fruit from a cold climate, low-yielding, high-acid vineyard, barrel fermenta-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tion can peak at 85ºF, undergo full MLF, and stay on the lees for 10 months, and the wine will be brighter and fruitier than a non-MLF, tank-fermented Chardonnay from Alexander Valley, for example.

"All winemaking must be directed by the vineyard. Fruit from colder climate vineyards is treated differently from fruit from warmer climates. That's the only way a winemaker can let the vineyard show through."

Yeast choices

"To the extent we are making wines that exhibit 'pride of place,' the yeast strain should not add a secondary character, or cause us to lose a primary one," says Dyer. "If the yeast ferments too rapidly, we may lose something to heat and elution. If it brings an off-character, such as sulfide or VA, we are certainly not showcasing the site. Some of the early selected strains seemed to be 'industrial' while some of the more recent designer isolates are more promising. But if we can successfully utilize indigenous yeast, are we not working within the context of *terrior?"*

For consistency, Shakked notes that he favors Lalvin CY-3079 for Chardonnay. But he believes that yeast-induced differences in aromas and flavors do not last beyond six months to one year.

Since 1993, Sayre has conducted yeast trials with seven different yeast strains and Russian River Chardonnay to judge long-term ageing potentials. He found that yeast differences are retained in the wine, particularly if the wine is barrel-fermented then aged on the lees. Certain yeasts autolyze quicker. They give up yeasty flavors to the point of being what some may call "reduced."

PdM and Pasteur Champagne yeasts produce a citrus-grapefruit character that, long-term, begins to express mineral characters.

Barrel choices

These winemakers do not believe that oak type affects Russian River Valley *terroir* characters in the wine. Most prefer French oak for reserve-style wines. "What winemakers tend to do," Sayre says, "is take the best fruit and best lots then match them up with the best barrels. Then, when it comes time to make the blend, all the best 'stuff' is too oaky.

"Quite often, a winemaker can get trapped with all the best wines in new oak barrels, and there's no going back."

For all Sonoma-Cutrer Chardonnay bottlings, Adams has backed off the proportion of new oak. He changed from a three-year barrel program to a five-year rotation. To lessen the wood character, the largest share of barrels are from a French cooper who seasons the wood for 30 to 36 months.

"Barrels can contribute positive flavors and complexities," Adams

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contends. "But I don't like raw wood characters in Chardonnay. For the Cutrer Vineyard 2000 vintage, I used primarily one-year-old cooperage. Formerly, I used a 50/50 blend of new and one-year-old barrels."

Goldfield purchases new barrels from five coopers. For him, the blend of characters from different coopers makes a significant impact on wine style. "I like a little spice element from one cooper," he notes, "but when I get a lot of it, I don't like the wine.

"Some winemakers assume that heavy-toasted barrels are woodier. In most cases, I've found that the lighter-toasted woods show more wood character. So, with the coopers where we've discovered this, we've moved to having them toast the barrel more heavily than I used to request.

"Heavy toast to one cooper, who builds a big fire and toasts in a few minutes versus another cooper, who toasts more slowly, makes a big impact. As a small producer, I buy barrels just like a consumer buys wines. I can't tell a cooper how to make barrels because I've never made them. What I observe, however, is that the phenolic character from the wood may be greatly reduced by a long, slow, heavy toasting of the barrel.

"I like the spice aromas and ginger character of medium or medium-plus toasting, but on the palate, I always find that a heavier toast is sweeter."

Shakked notes that in working with French coopers, insisting on wood from a given forest is futile. "It is best to work with a cooper for consistency order to order," he says. "The winemaker then begins to understand how a barrel from a particular cooper contributes to the style of wine and a wine from a particular region."

Last thoughts

Dan Goldfield sums up best. "Winemaking is a *terroir* consideration. It relates to fruit intensity in one region, such as Russian River Valley, that allows greater use of cellar techniques versus another region, where such techniques may be entirely inappropriate." ■

PWV thanks Sonoma-Cutrer for hosting the discussion/tasting.

TASTING NOTES

1998 DeLoach Vineyards Chardonnay, Russian River Valley

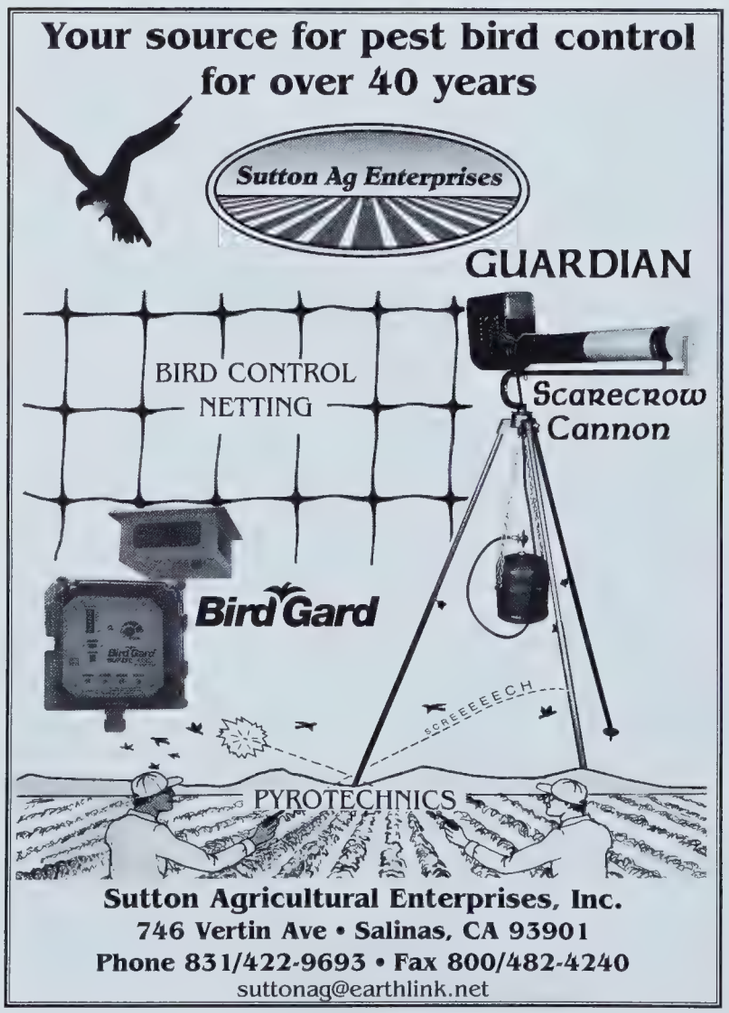
Aroma: forward lemon/citrus, juicy fruit, pear, green apple, cantaloupe, lychee nut, spice, and honey.

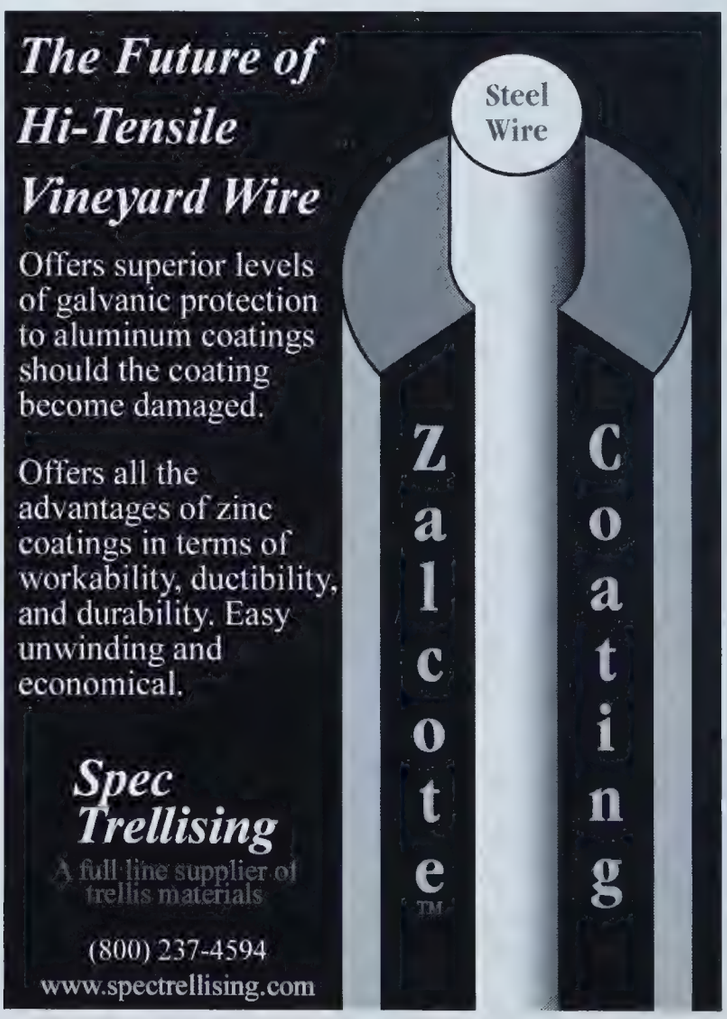
Flavors: bright lemon, Granny Smith apple, crisp acidity yet full middle, chamomile tea, and orange zest.

Balance/Finish: excellent acid-fruit balance, showy, delicious; very good continuity from middle to finish.

1998 Dutton-Goldfield Chardonnay, Dutton Ranch, Russian River Valley

Continued on page 72

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NAPA AND SONOMA COUNTIES

ROLLER COASTER decade obscures upward trend in vineyard values

BY John Bergman

In general, vineyard owners are very happy with the results of the 2000 harvest. However, a look back over the last 10 years presents a roller coaster ride of ups and downs in production volumes, grape prices, and frustration. Through it all, the one consistent trend has been rising vineyard land values.

Looking back

In 1990, vineyard values in northern California averaged $41,500 per acre. The highest price paid that year was $67,500 for an acre of the finest ultra-premium producing vineyard. Grapes averaged $1,500–$1,600 per ton — the highest ever in the California wine grape market.

As we survey the entire decade, the ups and downs of the 10-year roller coaster ride are readily apparent. The California recession was in full swing by 1991, and by 1993, vineyard values had fallen along with all other real estate values.

Grape prices had fallen to an average of about $1,400 per ton, then fell further to $1,300 per ton in 1994. These were frightening times for growers and winery owners. From 1992 through 1994, there were more foreclosures and bankruptcies in the wine country than in any other two- to three-year period except for the Prohibition years.

Turning lemons into lemonade

Some vineyard values had taken a dip of over 30%, and there were very few sales being made. But there were some smart buyers on the scene. One of them was Jess Jackson, founder of Kendall Jackson Wine Estates (Santa Rosa). Many observers thought that he was biting off more than he could chew when he began accelerating his vineyard real estate purchases in the early 1990s. But he proved us all wrong. This wiley gambler was in the right place at the right time — with a good credit line.

It wasn't long until things changed. The market began to stabilize in late 1995 and then rally. Grape prices climbed slowly, culminating in a 1998 bidding war for premium wine grapes in Napa and Sonoma counties. Prices jumped to an average of over $2,000 per ton — the first time in history it had broken that magical barrier. Both grape values and vineyard values were on the rise.

Real Estate Investment Trusts (REITs) had become a hot investment item in 1997. The trusts began to buy vineyard properties in both counties, further heating up values and sending them sky high.

Red, red wine

In 1992, the "French Paradox" report aired on the *60 Minutes* television program, in which medical professionals showed that red wine is good for the heart. In an almost overnight reaction, sales of California red wines increased. People were paying attention.

As if this weren't enough, a study published in the *British Medical Journal* (Vol. 311, pp. 1657, 12/23/95) demonstrated that red wine contains properties that kill live bacteria, such as e-coli, salmonella, and other bacteria.

What does all this mean to the wine industry? In particular, how will this news affect vineyard values? Simply put, greater demand means higher prices for wine, and higher prices for wine mean higher prices and values for vineyard land.

Challenges

In 1990, the winegrape growing industry was battling the phylloxera pest, with many vineyard owners going deeply into debt from having to replace so many vines. Billions of dollars were spent replanting entire

vineyards. Now that phylloxera appears to be behind us, the glassy-winged sharpshooter is here. Its appearance in 1998 began another war for winegrape growers that will continue well into the new millennium.

Mother nature rules

The decade's roller coaster ride included the 1997 appearance of El Niño, which helped produce the largest harvest in California history. A year later, La Niña caused grapevines to produce the smallest harvest in the decade.

Because of the large 1997 harvest, there was talk of a major glut on the market. This false information made front page news. Growers were afraid they wouldn't be able to sell their grapes. In 1998, when the exact opposite happened, growers wanted to return all the extra storage equipment that they bought the year before.

"Cult" following

During the last decade, another great wine varietal was "discovered" by the masses, which had a very favorable impact on vineyard land values in Sonoma County. The 1990s saw the rise of Pinot Noir drinkers. They couldn't get enough — and one of the very best Pinot Noir locations is Sonoma County.

As the Pinot Noir drinker became more enamored with this light and fruity wine, more winemakers began to compete for the position of top producer.

Pinot Noir is one of the most difficult winegrapes to grow and one of the hardest to make into good wine. Ask any winemaker. As Pinot Noir demand became stronger, it became apparent that a select few winemakers had accomplished the difficult task of becoming "cult" Pinot Noir producers. Pinot Noir had placed Sonoma County in the limelight and had put the "Russian River Viticultural Area," "Coastal Viticultural Area," and the newest kid on the block, "Green Valley Viticultural Area," high on the list of best Pinot Noir grapegrowing areas.

Quality not quantity

In the last 10 years, there has been a growing preference for higher quality wines. The ultra-premium level saw more buyers paying from $30 to over $100 per bottle for what they considered the finest of their favorite varietals. The awakening became apparent when it was discovered that the demand from premium wine drinkers

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could not be met by the supply of premium wine grapes and premium winemakers. It appears that, as consumers' palates have become more sophisticated, higher quality premium wines tend to fly off the shelf.

The cult factor has given rise to more small, "ultra-premium" wineries producing just enough of their sweet nectar to wet the whistle, but not enough for those who wish to buy a case or two. They may make from 200 to 400 cases of their known varietal, and the only way to obtain a bottle is to either be the grapegrower who sold the grapes to the winemaker or be a relative. There are always people waiting in line and buying futures.

The trend appears to be toward the higher-end wines, which in turn pushes the cult vineyard values way up. We all want what we can't have.

So, the cult wineries have taken on a DeBeer's-type attitude, which is to allow only enough wine for sale to fetch the highest price per bottle. When it's gone, it's gone. "Make it a privilege to own a bottle of my wine" is their slogan. I don't condemn them; I applaud them for a great marketing concept. After all, they are making the great wines that we all want to drink. This is America — why not capitalize on their talents?

So, what's ahead?

In the first decade of the new millennium the wine country will see many changes. Let us examine the factors that create such anticipated change. Silicon Valley in Santa Clara County appears to be moving to Santa Rosa, Petaluma, Sebastopol, Cotati, and Rohnert Park. They call this entire area "Telecom Valley" now, with miles and miles of fiber optic wire being laid in Sonoma County.

The southern Sonoma County area, running along Highway 101, will soon be filled with millions of square feet of commercial and industrial buildings. It is my opinion that we have not seen anything yet regarding the increase of real estate values in the wine country.

Below is a short list of the companies that already have a foothold in Telecom Valley:

I feel strongly that now is a good time to invest in a small or large vineyard or in land that can be developed into vineyard property, along with a home or a building site. As young high-tech families continue to move into the area, they will need homes. Most of these families will be making way above the average income, and will wish to experience the dream of living in wine country. They will also

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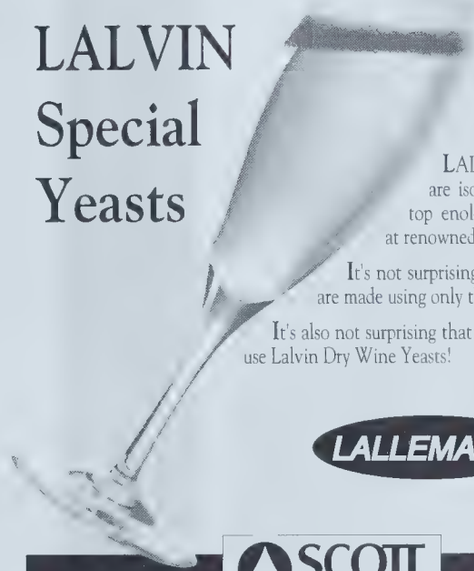

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want to have a small-to-medium-size vineyard and build a large custom home with a pool, in-law unit, and other creature comforts.

Where are the bargains?

Well-known *hot* wine country areas, such as Napa, Yountville, Oakville, Rutherford, Calistoga, St. Helena, Alexander Valley, Knights Valley, Healdsburg, Sonoma, Kenwood, Glen Ellen, and others will be inundated with buyers willing to pay more than top dollar. These are wonderful and well-known areas that will always be in high demand. They are also becoming very crowded — with bargains harder to find.

However, there are other areas to look into for investment purposes. I strongly believe that such communities as Forestville, Sebastopol, Occidental, Freestone, Guerneville, Cazadero, and others — which appear to be sleepy little country towns in the western portions of Sonoma County — will be in major demand over the next few years. Prices in these areas are still realistic, and the lush landscape is beautiful and unspoiled.

Despite their rural tranquility, these towns are only about a 30-minute drive to the giant companies moving into the southern part of the county. Highway 101 is just minutes from these unique areas and is a straight shot to these giant companies that will bring thousands of jobs along with their fiber optics technology.

Lessons learned

Sonoma County has learned what not to do while watching Silicon Valley change from clean air and a beautiful agricultural community in the 1950s to a concrete jungle filled with smog. There you will find two to three homes on an acre of land, and a lot of people in your favorite grocery store at the same time. I lived in Saratoga for several years, and in 1987, I moved to Napa. I know from experience.

Appreciation and appreciation

I believe that a rolling 10-acre parcel of land — with six acres that can be planted to grapevines, a building site, and views to forever in the middle of Forestville — which has a value today of not more than $950,000, should be worth a minimum of $3 to $5 million in about 10 years.

Yesterday

Looking back over my analysis of vineyard values since 1960, I can see that vineyard values have done well over the course of every decade. The

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roller coaster effect occurs over just a couple of years, but if you plan on holding your wine country investment for a decade, my predictions are pretty safe to assume. See for yourself: Here are the facts as they came from the county assessor's office.

What will happen over the next 10 years? No one knows for sure. But if you follow trend lines, and believe that the wine industry will be around for a long time, then it should be business as usual — which includes plenty of ups and downs on the way. At 10-year intervals, things will always be better than they were 10 years before.

Speculation

Vineyard values have increased anywhere from 100% to 277% at 10-year intervals during the last four decades. The year 2000 average producing vineyard was valued at $92,500 per acre, a 122% increase over 1990. Looking forward using a 122% growth rate, one could predict that the same vineyard may be worth $206,174 in 2010.

Crystal ball

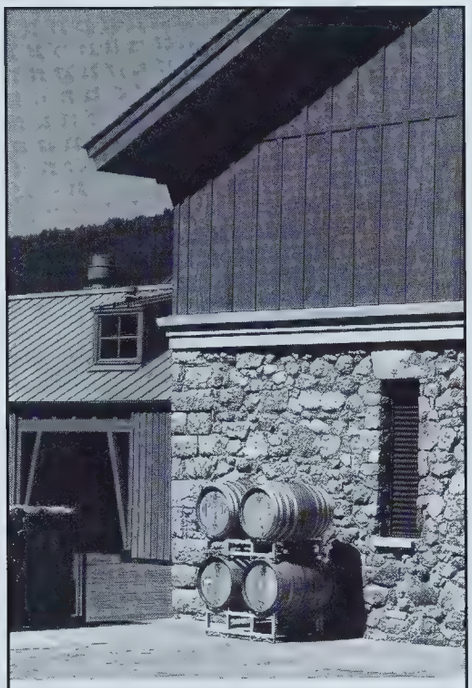
I have been lucky over the past 14 years in projecting future vineyard values. In fact, my predictions have been on the conservative side.

I believe strongly that if you invest in vineyard properties, you must think quality. Since every state in the U.S. except North Dakota has wineries, and every corner of the world is becoming more involved in making more wine, a smart investor must take note. My theory, "It only costs a nickel more to go first class," is the best insurance policy that you can get when buying vineyard properties.

Why?

Napa and Sonoma counties represent 8% of the entire grape-producing industry in California. Yet the two counties represent a big part of the "premium" wine makret. There will never be enough premium-quality vineyard land to meet the demand for ultra-premium wines. ■

John Bergman is a Real Estate Broker specializing in vineyard estate properties in Napa, Sonoma, and Mendocino counties and writes educational articles concerning vineyard properties. For more information, call 707/433-5400 or visit his website at www.bergmanvineyards.com



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PART II

Impact of TMDLs on California's Central Coast

BY Lizanne Wheeler & Patrick Brown

How is the Total Maximum Daily Load (TMDL) and nonpoint source pollution process playing out on the Central Coast of California? In Part I (*PWV* March/April 2001), we discussed the history of the United States *Clean Water Act* and California's water act, *Porter-Cologne*.

It is not surprising to find the leading edge of nonpoint source pollution management located in the heart of California's Central Coast. This is where the nation's largest protected marine area, the 5,000-square-mile Monterey Bay National Marine Sanctuary, meets "The Nation's Salad Bowl," the $3 billion agricultural industry of the Monterey basin.

The sanctuary claims the greatest biodiversity in the world's temperate zone, as well as more than 50 species that are federally listed. Monterey basin agriculture produces more than 200 different crops, including 80% of the nation's lettuce.

The lands that drain into the sanctuary contain forests, urban areas, intensive cropland, vineyards, and rangeland. The potential nonpoint pollutants that may impact the sanctuary include sediments, pesticides, oils and grease, nutrients, heavy metals, and pathogens. Of these potential pollutants, three are of primary concern to the viticulturist:

1. **Sedimentation** — Although sediment run-off is a natural process in watersheds, excessive sedimentation can affect fish populations, smother the bottom-dwelling ecosystems in estuaries and the sanctuary, fill in wetlands, and cause stream channel instability.

2. **Pesticides** — It is interesting to note that many of the pesticides being detected in the sanctuary are "old generation pesticides" that have been banned for a number of years. These include DDT, chlordane, and toxaphene. These persistent pesticides are transported with the sediment run-off from urban and agricultural sites. Because the newer generation pesticides are far less persistent and their application is more closely monitored, they are expected to be less problematic. However, very little data has been collected at this time.

3. **Nutrients** — Nutrient run-off, particularly nitrates and phosphates, can lead to algae blooms, which in turn can reduce oxygen levels and may cause toxin accumulations in shellfish. Although viticultural practices generally call for minimal nutrient inputs, we can expect these practices to be scrutinized by the regulatory agencies.

Basin strategies

In 1992, the federal, state, and local authorities under whose jurisdiction water quality falls met to address the issues of water quality protection within the Monterey Sanctuary and drainage basin. As part of the sanctuary designation, the parties signed a Memorandum of Agreement. From this agreement the Water Quality Protection Plan (WQPP) for Monterey Bay National Marine Sanctuary has evolved.

The WQPP attempts to coordinate all of the regulatory authorities to ensure a consistent approach to water quality issues and to prevent subjecting participants to conflicting applications. An outcome of the WQPP is the Agricultural and Rural Lands Action Plan, which outlines a series of strategies intended to address the specific issues of nonpoint source pollution. The strategies can be grouped into six principal areas of concern:

1. Agricultural industry networks
2. Technical information and outreach
3. Education and public relations
4. Regulatory coordination and streamlining
5. Funding mechanisms and incentives
6. Public lands and rural roads

Below, we will take a brief look at the first two, which are currently impacting viticulture to the greatest degree.

Agricultural industry networks

The first strategies revolve around the inherent conflicts between the regulatory authorities charged with implementing the WQPP and the property owners who are targeted by the regulations. It is the policy of the regulatory agency, the Regional Water Quality Control Board (RWQCB), to keep its regulatory "hammer" behind its collective back by encouraging voluntary implementation of practices that will reduce nonpoint runoff.

Landowners, while perhaps eager to voluntarily implement appropriate practices, are apprehensive about allowing any regulatory agent to inspect their environmental "laundry," soiled or not. In an effort to defuse this conflict, the six local county farm bureaus have stepped up to the plate to act as go-betweens for the two groups by forming the Coalition of Central Coast County Farm Bureaus.

An important function of the WQPP is to evaluate whether the practices being implemented are effective in reducing nonpoint pollution. The coalition will provide this data in order to satisfy the regulators and ensure confidentiality for the landowners. The coalition will also serve as a conduit for organizing regional meetings.

Technical information and outreach

The second set of strategies involves dissemination of technical information.

This includes evaluation of appropriate land stewardship practices; developing self-monitoring tools; providing technical expertise in the field; compiling information in a central location; and providing grower workshops.

This spring, there are a series of grower workshops targeted to water quality issues through the University of California Cooperative Extension in cooperation with the USDA Natural Resources Conservation Service and local Resource Conservation Districts.

These organizations, cooperating with the Farm Bureau, are pilot-testing workshops on nonpoint source self-assessment that educate growers on evaluating their own farming operations, documenting current management practices that protect water quality, and identifying areas that need improvement. Workshop participants have the opportunity to meet with various regulatory agencies to discuss funding, cost share programs, regulations, and the permit process.

Tracking performance

A major component of the regulations are performance measures that allow regulators to prove to the U.S. Environmental Protection Agency, Congress, and the public that the entire process is moving forward. The performance measures are spelled out in an implementation plan developed by the State Water Quality Control Board and the California Coastal Commission. (Available on the web at http://www.swrcb.ca.gov/nps/cammpr-agr.doc)

An example of a performance measure for the Central Coast is the implementation of sediment basins, cover crops or grass-lined waterways on five to 10 farms each year from 1999 through 2002.

A second aspect of performance tracking is whether or not the actual management practices being implemented are effective in reducing nonpoint pollution. This issue is being dealt with at the local level as funding becomes available. The local resource conservation districts, the National Resource Conservation Service (NRCS), UC Extension, and private consultants are providing technical expertise in this area.

The Central Coast Vineyard Team grower group was recently awarded a $250,000 grant from the RWQCB for a three-year program to evaluate and incorporate appropriate management practices into their Positive Points System evaluations and to correlate Positive Points scoring and water quality.

Management practices

There are many practices available that can be utilized to reduce the potential of nonpoint pollution from agricultural fields. These are often referred to as best management prac-

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tices or BMPs. It is important to note that these practices should be considered site-specific. What may be "best" for one grower may not be appropriate for his or her neighbor. Therefore, when we refer to BMPs, we should be thinking "most appropriate management practices."

There are published lists of practices that are generally accepted as appropriate. The NRCS has a list of practices for California on the web at http://www.ca.nrcs.usda.gov/rts/sec4.htm. Many of these practices have been integrated into mainstream viticulture on the Central Coast. These include the growing of cover crops, use of windbreaks, integrated pest management, micro-irrigation management, soil moisture monitoring, and low-till farming.

Some other practices that are less widely adopted but hold promise are vegetative buffer strips, grassed waterways, sediment basins, and rural road erosion control. Your local farm advisor or NRCS office can provide a list of appropriate practices for your specific vineyard site.

Becoming involved

The TMDL and nonpoint pollution regulatory machinery is definitely on the move. The programs are coalescing, and it is critical to your future ability to farm that you and your neighbors become involved in the process this season.

Viticulture is one of the most visible agricultural industries in the state, allowing us the opportunity to prove our stewardship of our land and our communities' water resources. Plan on attending a water quality workshop in your local community. If none are scheduled, contact your local Farm Advisor or NRCS office and help plan one. ■

References

The authors relied heavily upon and suggest the following documents for further reading:

"EPA Region 9: California Water Quality Planning Projects," http://www.epa.gov/region09/water/projects/index.html

"MBNMS Action Plan IV: Agricultural & Rural Lands," http://bonita.mbnms.nos.noaa.gov/Resourcepro/reports/Agaction IV_99/index.html

California Field Office Technical Guide: "Section IV Practice Standards," NRCS, http://www.ca.nrcs.usda.gov/rts/sec4.htm

"Nonpoint Source Program Strategy and Implementation Plan, 1998-2013 (PROSIP)," http://www.swrcb.ca.gov/nps/planvol1.doc

Lizanne E. Wheeler and Patrick D. Brown are independent irrigation design consultants specializing in developing water management programs and bilingual management training for micro-irrigation systems. They may be contacted through Vineyard Water Systems, 521 Lucerne Road, Cayucos, CA 93430, 805/995-0587. Reprints of their recent publications are available at http://www.vineyardwater.com

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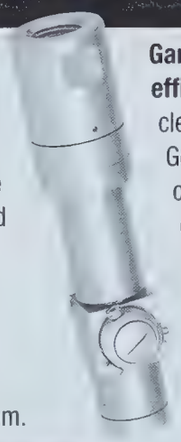

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When things go wrong

BY Veronica Barclay

Good business is not just about making and selling good wines. Selling successfully is more than clearing out your inventory and taking money from people. While both of these things are important in order for us to survive in the competitive wine arena, we also need to focus on keeping our customers.

When producers make quality, highly rated wines, they are rewarded with sold-out products and customers who clamor for more. But how do you handle the situation when demand exceeds supply or when customers complain about how rudely they were treated in your tasting room? Their frustrations can test your customer service limits. Soothing customers and resolving disputes is a marketing function you will need to perform as long as you are selling wine.

People make mistakes

As we launch new products, increase vineyard holdings, expand production facilities, and grow our business, we expand our staff to accommodate our increased customer base. The wine business is definitely a people business, and as humans, our employees sometimes make mistakes. When they do, our customers are often the first ones to announce it to us!

Over the years, I have witnessed several unintentional errors by winery employees, such as overcharges or mis-shipments. But what happens when an irate caller informs you of the third mis-shipment? Most of the time, our first instinct is to respond with a "Let me look into this and get back to you" approach. While the customer may have been willing to tolerate the mistake once — or even twice — the caller has now reached his or her limit, and is demanding accountability.

Your most difficult customer has the potential to remain your customer, perhaps even becoming among your most devoted, if you are able to handle this type of situation in a positive manner. This should be your primary goal when handling any customer disagreement or dispute. You'll not only have to attempt to preserve the relationship by correcting the mistake, but you'll need to convey how much you value your customer.

Respond positively

What's the best way to handle customers frustrated by poor service? Apologize for the error, and acknowledge their frustration. Let them know that you intend to resolve the situation quickly. The worst thing you could do is to leave the angry customer in the dark.

If you promised to look into the situation and get back to the customer, then keep your promise. If it takes longer than anticipated to collect the facts, call the customer back with assurance that you are still working on it and will keep him or her posted on your progress.

Don't blame it on production

Production mistakes are another source of aggravation that can cause huge embarrassment. Low-fills, mislabeled wine, and flawed vintages are just a few of the costly production mistakes that can result in bad feelings toward the winery.

Several years ago, while working in the sales and marketing department of a mid-sized winery, I received a phone call from an angry distributor in the Midwest. He exclaimed that the entire pallet of limited production wine that had arrived in his warehouse was filled with beautifully labeled, empty bottles!

It turned out that a portion of that bottling had run through the bottling line without receiving corks, and after several months of storage and a train trip to the Midwest, all the wine had leaked out of the cases through the capsules. This was a particularly difficult case to "fix." While the winery could credit the distributor back for the cost of the wine and freight, we could not send him a replacement order, since all allocations had been shipped, and the vintage was completely sold out.

In production errors, one of the worst things a salesperson can do is blame the mistake on the winemaker. Almost everyone in the winery will eventually become aware of an error as the winery owner, accounting, public relations, sales, marketing, and production departments deal with its fallout. Blaming another employee or department exhibits lack of solidarity as a winery team.

When quality control issues create customer service problems, the winery should have a policy in place to handle distressed or flawed wines. This may involve individual recalls, refunds, or replacements, depending on your individual situation. Customers care little about who made the mistake, but will expect the winery to "make it right."

The "rude" employee

Sometimes customers may call a winery and complain about how rudely they were treated by a particular staff member. You can choose to defend the employee, but that may produce even more anger and frustration, perhaps driving the customer away permanently. If you take the customer's side merely to appear sympathetic, you step against the winery.

How do you deal with this situation? Try to remain neutral. It's difficult not to take sides, especially if the complaint is about you or someone in your department. But resist the temptation to defend yourself or your co-worker. It may only inflame the situation and make matters worse.

The most effective behavior is to listen to the caller to determine the source of his or her frustration, then try to defuse the situation with responses like "Go on," or "I see." If you respond in this manner, you are not admitting any wrongdoing and are neither agreeing nor disagreeing with the customer. By listening and acknowledging the customer's complaint, you are hearing him or her out and gathering the facts to resolve the situation.

If there is a solution to the problem and you have the authority to fix it, then propose your solution to the customer. If not, let him or her know that you will investigate and respond in a timely manner. Close your conversation by thanking the caller for bringing the matter to your attention and for his or her patience. This is key in relaying how you still value him or her as a customer.

Is the customer always right?

Convincing your staff to adopt a "customer is always right" attitude is a healthy approach but easier said than done. Sometimes customers are not right, and they will challenge winery employees with invalid complaints.

In this situation, your primary goal should be not to argue with the customer. The last thing you want is to make customers feel they are wrong for doing business with your winery. In a calm, educational manner, explain why the complaint is invalid or not really a problem. Misconceptions can usually be resolved once the customer receives accurate information.

Some wineries maintain a policy to take back wine or refund money even if customers are dead wrong. Why do they do this when they know customers are taking advantage of them? They would rather deal with a manipulative customer than have the customer bad-mouth the brand and generate negative publicity to friends, family, or other current customers.

Sometimes we lose one

Tasting room personnel deal with the front line public for long hours. No two days are ever the same, and much of their energy is often spent dealing with unpredictable events. If approached by an abusive customer near the end of the day, their energy level is usually low and stress levels are high. Even though they know mentally the proper way to deal with an upset patron, it may be hard for them to follow through.

A tired employee may sometimes handle a volatile situation improperly, and the customer could walk away even angrier. When this happens, the employee may feel he or she has failed both the customer and the winery as its representative. Repeat episodes can often result in employee burnout.

While it is generally a rare event to see a customer stomp away unsatisfied, it does happen. We may lose a customer, but we still have our employee — and an obligation to try and prevent it from happening again.

Staff reinforcement

Approaching your normally enthusiastic sales team with customer complaints can be a delicate issue. Nothing will deflate their enthusiasm faster than an edict from an angry supervisor.

Instead of singling out an individual offender, consider gathering your staff in a meeting to discuss the sequence of events. Allow them to openly express their opinions and concerns but remind them that handling customer complaints is part of their job.

Review and clarify your customer service policies, using hypothetical situations to illustrate how you expect them to respond. You will increase your staff's confidence and performance levels if you provide them with specific guidelines on how to handle difficult situations, such as intoxicated guests, unruly children, or disruptive customers. If you have no customer service policies in place, this could be the time to solicit ideas from employees to create such policies.

Positioning the group as a team will help staff members adopt the winery's policies as their own. However, if you are insincere or treat them like children, your employees will view you as unappreciative, and you won't win their support. Ending your staff meeting on a positive note will reinforce their feeling that you have confidence in them.

Customer service policies are a very big part of your marketing and sales program. Savvy wine marketing managers know how much customer service can impact the bottom line.

Service is never more important than when things go wrong. It's the critical point when you have the opportunity to keep or lose a customer. Satisfying irate customers offers a way to strengthen your bond with them. When service creates satisfaction, customers make referrals and come back to buy again. ■

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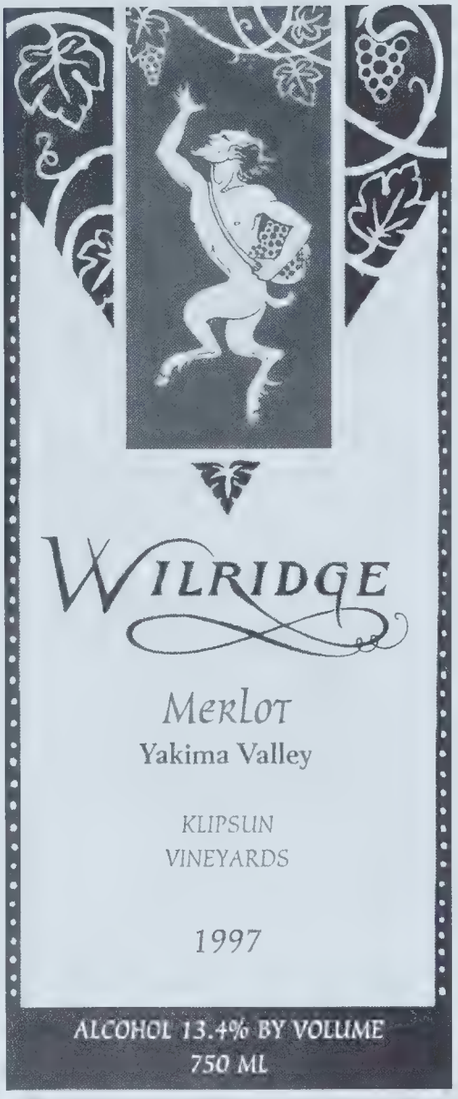

BY John Carter

When Paul Beveridge and Lysle Wilhelmi came up with the idea of starting a restaurant with a winery, the plan seemed like a good one. They would have a French-style bistro where the owners lived on the premises: "Mom" did the cooking, and "Pop" made wine in the basement.

Wilridge Winery was founded in 1988 in the historic Madrona district of Seattle, WA. The winery name is a combination of portions of the principals' last names, Wilhelmi and Beveridge. For several years, the winery produced up to 200 cases of wine in a 500 sq. ft. room with a concrete floor and a six-foot ceiling, under the restaurant, Madrona Bistro.

"We started with an assortment of new and used equipment, and gradually replaced it as we expanded," says winemaker Beveridge. "I think this is a problem for small wineries trying to get started like we did. There is plenty of equipment out there for large wineries and home winemakers, but little in between. It really helped to find Presque Isle Wine Cellars in North East, PA, and Wine Supply in Portland, OR. These suppliers cater to small wineries. It also pays to buy used equipment from other wineries as they outgrow their existing equipment."

It took two years for Beveridge to obtain the necessary permits for the winery, because of Washington State's "tied-house" laws. Finally the family took its case to the state legislature to request (successfully) that existing legislation authorizing brew pubs be expanded to include restaurants that also own and operate wineries.

Because the restaurant was a French-style bistro, and both Paul and Lysle loved French food and wine, Beveridge decided to make French-style wines, focusing on French varietals aged in French oak.

Start-up and growth

The first wines produced in 1988 were two barrels (50 cases) of Cabernet Sauvignon made from grapes from the Crawford Vineyard in Yakima Valley, WA. When production hit a high of 200 cases from the 1991 vintage, Beveridge had enough wine to submit to competitions and to writers for review. The effort paid off with multiple gold medals and excellent press notices.

In the early years, Wilridge wines were sold only at the restaurant, at full restaurant prices ($24 in 1994). Diners could combine dinner with a tour of the winery and would often go home with a case of Wilridge wine.

In 1995, Wilhelmi became tired of playing "friend, mother, shrink, and employer to a dozen cooks, dishwashers, and waiters who would all rather be actors, musicians or artists." The young couple closed the restaurant and began expanding the winery.

They raised the building, transforming the upstairs into a residence. Mack, their first son, was born just one week after the building was raised, and Wilhelmi vividly recalls carrying the new baby up a ladder in order to get into the living quarters.

A 1,500 sq. ft. cellar was excavated under the former restaurant, and was finished two weeks before the 1996 harvest. New equipment from Italy included a one-ton basket press with two cages. There are six fermentors including two used three-ton capacity dairy tanks, two stainless steel tanks, and two plastic fermentors.

Unfortunately, there was a bad winter freeze in early 1996, and the Washington crop was severely limited. Wilridge was only able to obtain enough grapes to make 500 cases, which were all sold on allocation to

loyal former restaurant patrons and a few key wine shops in the Puget Sound area. The crop, though small, was of extremely high quality, and the Wilridge wines collected accolades, including a salute as one of the "best American Merlots" from the *Wine Enthusiast*.

Vineyard sources

"We focus on single vineyard red wines that reflect the vineyard site more than my winemaking style," Beveridge explains. "Since we have no vineyards of our own, we have developed close relationships with the owners and managers of some of the best vineyards in the Pacific Northwest who share our goal of producing the best possible wine without compromise."

Three outstanding vineyards supply most of the grapes for the winery: Corral Creek Vineyards, Klipsun Vineyard, and Spring Valley Vineyards.

"Since 1992, we have been working with Klipsun Vineyard on Red Mountain at the eastern end of Yakima Valley," continues Beveridge. Red Mountain is, perhaps, Washington's most famous *terroir* for red grapes, and Klipsun's grapes may be the most sought after in the state.

"Klipsun Vineyard, located on a gentle, southwest-facing slope, receives ample sunshine and warmth and is always one of the first vineyards in the state to ripen. The arrival of Klipsun Merlot grapes typically marks the beginning of harvest for our winery." Wilridge also buys Cabernet Sauvignon and Nebbiolo from Klipsun.

At the winery each grape variety is vinified separately. Blending, if any, does not occur until shortly before bottling.

Corral Creek Vineyards, planted to the Pommard clone of Pinot Noir, sits on a steep south-facing slope at the north end of Oregon's Willamette Valley. Harvest usually occurs in late September or early October before the fall rains begin.

During the hand-sorting of grapes at the winery only perfect clusters are retained. The grapes are carefully crushed and cold-soaked prior to fermentation. After a gentle pressing, the wine undergoes controlled ageing in oak barrels from the center of France, coopered by Tonnellerie Sylvain. "Using barrels from a single cooperage helps maintain a consistent style and allows the *terroir* and vintage changes to be recognizable," states Beveridge.

Wilridge also sources Merlot from Spring Valley Vineyards on a steep, south-facing slope in the southern Palouse near Walla Walla, WA. The cooler temperatures at Spring Valley make for a later harvest, but also provide more hang time and help preserve the fruit character of the grapes.

Previously, Spring Valley Merlot was used as a primary ingredient for the Wilridge "Melange" — a Bordeaux-style blend of Cabernet Sauvignon, Merlot, and Cabernet Franc — the only exception to the winery's concentration on single-vineyard wines. However, Beveridge has been so impressed with the quality of the Spring Valley grapes that, from the 1998 vintage on, the winery has produced a vineyard-designated bottling of Merlot.

Beveridge continues to experiment with other vineyard sources in search of the best *terrior* in the Northwest. In 2000, he added Syrah and Cabernet Franc from Stout Ranch at the western end of the Yakima Valley — a much cooler site than Klipsun. A total of 19 tons of grapes was purchased in the 2000 harvest.

Winery practices

"We strive for minimum intervention in the winery, and most years the wines almost make themselves," claims Beveridge. "Differences from year to year reflect the vintage, not changes in winemaking style or technique. I view oak as a spice, not the main ingredient, and let each vineyard express its *terroir*."

Wilridge purchases its grapes by the row and acre, not by tonnage. Beveridge tastes and analyzes the flavors, admitting a bias towards big, ripe flavors. "I tend to pick later than most Washington wineries," he states. He visits each vineyard on weekends in August and September to check ripening. He collects five-pound samples of grapes from each vineyard for analysis.

Beveridge is not a university-educated winemaker. "I had considered going to UC Davis," he comments, "but I had already spent so much time in school that I just could not bear the thought of more. Instead, I bought all the UC Davis textbooks. "It also helps that Lysle is a biochemist and can help with the lab work.

"I have worked with a number of Washington winemakers and have found the men and women in the Washington wine industry to be incredibly open and helpful. Everyone is dedicated to raising the bar and making the best possible wine, to the benefit of everyone in the industry."

Harvest and winemaking

There is, of course, no "typical" harvest, but Beveridge describes the usual procedures: "The grapes are hand-picked into 35-lb. lug boxes, and delivered to the winery in refrigerated trucks. We hand-sort the fruit and crush into small (three-ton capacity) open-top stainless steel fermentors."

After a 24-hour cold soak, Bordeaux varieties are pitched with commercial yeast cultures, typically Pasteur Red. Fermentation temperatures are held below 90°F. Chris Hanson freeze-dried malolactic culture is added when yeast fermentation becomes vigorous.

The wines are pressed at dryness — usually after two or three weeks — in a basket press. Free run wine is kept separate, but the press wine is almost invariably added back because of the natural softness of tannins in most Washington state grapes.

After pressing, the wine remains in stainless steel until clear and is then transferred to 100% new French oak barrels. Barrel ageing ranges from 14 months for Oregon Pinot Noir to 22 months for Cabernet Sauvignon. The wines are never filtered. Some may be fined with egg whites, if needed.

"We presently have 80 barrels," notes Beveridge. "In the past, used barrels were sold. Now they are used for Nebbiolo and Syrah."

Originally Wilridge focused exclusively on Bordeaux varieties, but in recent years Burgundy and Rhône varietals have been added. The winery bottles two Merlots, one from Klipsun Vineyard and one from Spring Valley Vineyard. The Merlots are always the first wines to sell out. Oregon Pinot Noir was added in 1996, and in 1998, the winery became the third Washington winery to produce a Nebbiolo. The most recent addition is a Syrah.

Because there is no room in the small winery for a bottling line, Wilridge uses Signature Mobile Bottlers, Portland, OR. "Frankly, I could not run my winery without them," Beveridge states. "They bottle our entire production in one day, which is great, even though it means I have to have everything ready for them on that day."

Wilridge wines are generally sold at high-end wine shops and restaurants. Per bottle price varies from $19 for the Nebbiolo to $24 for one Merlot and $29 for Pinot Noir, Cabernet Sauvignon, and a second Merlot. With the 1997 vintage, the winery expanded distribution into California, Oregon, Illinois, British Columbia, and Alaska.

Financing

Funding of the winery has been by the bootstrap method. Any revenue is reinvested in barrels and equipment.

Lysle Wilhelmi is president and sales manager for the winery. Beveridge, winemaker and winery secretary, has a full-time job as an environmental attorney for the firm of Heller Ehrman in Seattle. He and Wilhelmi are the only "employees," but the couple happily welcomes volunteers during crush and bottling.

"We earned a small profit in 1999 and a decent profit in 2000," Beveridge remarks. "If the national economy continues strong, we feel very optimistic about the future."

From 1997 to the present, wine production at Wilridge has remained at about 1,000 cases per year. "We do not plan to increase production until the boys (Mack was joined by Liam in 1997) are old enough to help in the cellar, then we hope to double production, which is the capacity of our present space."

Winery fun in the 'hood'

"The winery is an oddity, located in a small commercial district in a residential neighborhood above Lake Washington," Beveridge explains. "Crush and bottling are true neighborhood spectacles. Our harvest parties are famous, as five or six enthusiastic volunteers gather to greet a truck arriving with grapes. Everyone shares the work and the fun, and at the end of the day Lysle serves an antipasto buffet. After pressing, we leave bags of pomace on the front sidewalk, and within a few hours local gardeners

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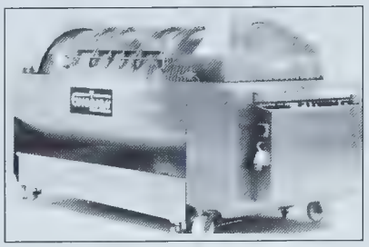

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have carried it all away to use as compost."

A second work session is held in the spring when a dozen volunteers join the bottling line. Volunteers are rewarded with a couple of bottles of new wine — their choice from current releases — if they work a half-day, and four or five bottles if they work a full day. Then everyone returns for the annual vintage release party in August. New wines are sampled and may be purchased at the event.

Earthquake survivor

Wilridge Winery survived the earthquake in Seattle on February 28. "We lost some ceramic pots and quite a few glasses," reports Beveridge. "Lots of wine bottles hit the floor, but not a single full bottle broke! It was a rolling quake, rather than a sharp jerk, so things sort of slowly fell over and rolled onto the floor.

"No problems with our nested (pyramided) barrels. We nest our barrels four-high using wooden chocks. The barrels rocked in the chocks, but the chocks actually became more secure. We place the chocks by hand, but now they cannot be moved by hand. This information should make other folks in earthquake-prone regions who nest their barrels feel safer."

Symbiosis

"I could not keep my day job, if we didn't live above the winery," Beveridge notes. "There is no way I could find the time if I had to travel to another location to make the wine. Besides, being where I am, I can baby the wines on a regular basis." After a moment of thought, he adds, "Of course, without my day job, I couldn't afford a winery in any loction." ■

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Varietal Review
Continued from page 58

Aroma: pear, lime, soft caramel, green apple, complex floral, spicy notes, and slight mineral.

Flavors: creamy pear, high acid, rich middle, lingering tangerine, yeasty almost nutty French-like funk.

Balance/Finish: acid, fruit, oak well balanced, lengthy, crisp and lemony.

1997 J Estate Chardonnay, Russian River Valley

Aroma: fresh fruit driven, good intensity, green apple, citrus, ripe pear, and toasty oak.

Flavors: soft and round in the mouth, forward, pear, honey, and cinnamon.

Balance/Finish: clean, lemony, very fresh, food friendly; very long without any bitterness; very well balanced.

1997 Lynmar Chardonnay, Quail Hill Vineyard, Russian River Valley

Aroma: citrus, pineapple, floral notes, green apple, honeysuckle, and slight mineral.

Flavors: showy acid but very rich and silky texture and creamy oak with forward fruit.

Balance/Finish: lush, fat, round, and viscous; excellent balance.

1997 Sonoma-Cutrer Chardonnay, Cutrer Vineyard, Russian River Valley

Aroma: delicate lime, mixed spices, green apple, and dried mushrooms.

Flavors: green pear, nice richness, barrels dominate fruit, lemon, lemon zest, and allspice.

Balance/Finish: slight grapefruit opens to mineral; crisp, high acid, very long.

1998 Joseph Swan Chardonnay, Trenton Estate Vineyard, Russian River Valley

Aroma: less fruit-driven than others in flight; ripe pear, popcorn, melon rind, coconut, and hazelnut.

Flavors: bright acidity, fresh apple, toasty oak, some reductive leesy notes, dusty mushroom, dried apricots, watermelon rind, and peach pit.

Balance/Finish: firm structure, complex; a singular wine, site expressive; medium weight, and long finish.

1998 Marimar Torres Estate Chardonnay, Russian River Valley

Aroma: tropical fruit, some sweet botrytis, hint of earth, apple, citrus, and gardenia.

Flavors: most unique in flight; crisp fruit, honey, well-balanced acid, pear, toffee, and caramel.

Balance/Finish: crisp, big, ripe, rich fruit; pretty wine overall.

1997 Rodney Strong Vineyard Reserve Chardonnay, Chalk Hill Vineyard, Russian River Valley

Aroma: white peach, honeydew melon, apple, exotic perfume, floral, exceptionally aromatic, citrus, and pineapple.

Flavors: mineral, green pears, stone fruits, spice, cinnamon, apple, clove, and heavy toast.

Balance/Finish: good acidity, lean finish; somewhat pushy oak.

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Overcoming language and literacy barriers

BY Trula M. LaCalle, PhD

"Put it in writing." Americans believe the written word carries authority. We think information is more important if it has been put down in black and white. We agree that documentation is essential to good business practices. We give employees notices, procedures, and deadlines in writing.

We are so accustomed to these standards, that we don't recognize that our emphasis on the written word is unique to American culture and not shared with Mexicans, Latin Americans, or other parts of the world. We forget that our employees, American or otherwise, are sometimes incapable of comprehending our written words.

With employees who speak limited English, we realize that our written English must be very short, simple, easy, and basic. We know that written English is less effective communication than "show and tell" when we are dealing with employees whose predominant language is Spanish. So, when detailed written communication is required, we have it translated to Spanish. That's as far as some of us go to ensure employee understanding of the written material. But often, it's not far enough.

Literacy difficulties can prevent learning

All workers have the right to learn about important aspects of their work. Most are capable of comprehending the information relevant to their jobs. Yet, language and literacy barriers often prevent learning. Transferring information across these barriers not only means hiring a good translator, it also means adapting the writing style to the ability of the reader.

What good are manuals, fact sheets, and posters if they contain incomprehensible words? How competent is an "expert" instructor if his vocabulary — even when speaking the employees' native language — is too academic or difficult for your employees to understand? Rather than increasing your employees' confidence through education, you will cause them to feel defeated by written material and methods that are meaningless to them or too difficult.

The challenge to employers and instructors is to be sure that *all* workers receive necessary information, not just those who are literate in their native language or who have a sufficient command of written and spoken English.

Reading, writing, and spelling problems create unfortunate embarrassment for many employees. As you might expect, employees usually try to hide their literacy problems and some of them are incredibly adept at doing so. They may be unwilling to sit in a meeting and take notes for fear that the person sitting next to them will notice their poor spelling or their phonetic attempt to write a word. If asked to provide a written response to a question — a task that is very common during training sessions — the employee may puzzle the trainer by not doing the assignment or not showing his paper to anyone.

An employee is chagrined when, due to literacy problems, he must decline an instructor's request to write on a white board or flip chart in front of fellow employees. The employee's distress is multiplied if the instructor strongly urges or encourages him to participate in this way, perhaps thinking that the employee is simply shy or exceedingly self-critical.

When employees do reveal their literacy problems, they want to do so on their own terms, when they are ready, and to whom they choose. With employees' sensitivities in mind, employers and instructors should be cautious about putting workers on the spot, especially in front of others.

Compensating for reading difficulties

Employees who have reading difficulty learn to compensate for their deficit by paying closer attention to the spoken word and to hands-on learning. On the job, illiterate employees compensate by relying on co-workers, friends, and family to read the content of written material to them. Very often, written materials that the employer provides must be taken home and studied with the help of a support person. If reading materials that are difficult cannot go home with the worker, he or she fails to learn the information.

A reading deficit usually has nothing whatsoever to do with an employee's intellectual ability. Although a learning disorder may be involved in the problem, this is not necessarily the case. Many other factors inhibit gaining literacy. Illiterate employees are often highly valued because of their excellent technical and/or leadership skills. Unfortunately, as valued employees with poor reading skills move up the ladder, they are eventually confronted by limitations that poor literacy imposes on them.

The U.S. Department of Education estimates that 10% of all adults in the U.S. are completely illiterate, that is, unable to read or write at all. In the U.S., those who can read English between a fifth and eighth grade education level are called "marginally literate." Those who read at the fourth grade level or below are defined as "functionally illiterate." State governments strive to publish widely used public documents at a sixth-grade reading level, yet most employers provide materials written at the high school level.

Employers tend to forget that, even though an employee has graduated from high school, literacy is not guaranteed. At the same time, employers tend to forget that some farm workers with no more than grammar school education can be more literate than their high school graduate counterparts.

Illiterate or college educated?

An employer of Mexican and Central American immigrants may be surprised to learn that one or more of his or her employees cannot read or write and has no formal education. Totally illiterate employees sometimes learn to sign their names, but learn nothing more. When they apply for jobs, they pick up applications and take them to a friend or relative to fill out for them. Even signing their names can be an embarrassing and awkward event, especially when others are watching and may notice how long it takes the employee to complete the signature.

In many parts of rural Mexico, the average child receives no more than a third grade education. Sometimes schools are not available. Often, children must work rather than go to school. Nevertheless, most Mexicans have gone through at least the sixth grade in Mexico. By our U.S. definition of literacy, a significant percentage of our field workers are not "functionally literate," even in their Spanish language.

In this discussion of literacy problems, it's important to remember the immigrant field workers who are highly educated. How many college graduates are working in the vineyards is hard to determine.

Professionals in Mexico and Central America abandon their positions and come to the U.S. to follow their dreams. Unable to find work in their professions, because their degrees and licenses are not recognized by the governing boards of this country, they work in the fields until they can find apprenticeships or other means of re-entering their careers or other professions.

Just as employers are sometimes surprised to find employees who sign their names with an "X," they are equally surprised to find lawyers, veterinarians, accountants, and teachers working for field-worker wages. In-house trainers or contract consultants are especially challenged when presenting training workshops in which participants represent the spectrum from illiterate to college educated.

Coping with employees' literacy difficulties

We must avoid making assumptions about employees' reading and writing capabilities based on their primary language or nationality, the number of years they have been in school, or the number of years in the U.S. Instead, a more useful approach is to find a tactful way to assess employee literacy. We might ask questions, such as, "Which of these printed materials is most appealing to you?" or "What is the best way for you to learn?" Or, better still, adapt instructional methods and present information so that it is comprehensible to everyone, regardless of literacy. It is essential to be sure that our employees understand important information.

Whether writing in English or Spanish, prepare documents so that they are easy to read and comprehend. Keep the text short. Make the content easy to remember. Avoid lengthy sentences. Organize the material into sections with bold headings. Use the simplest vocabulary possible to express an idea. Define technical terms and jargon. Use the active rather than the passive voice. Use type size that is slightly larger than customary. Be generous with illustrations and photographs. Use pictographs not charts that require explanation or reading.

In addition, choose translators who write in simple, colloquial Spanish and who avoid words that are specific to certain regions or Latin American countries. Choose instructors who are sensitive to these issues and who have prepared their materials with these challenges in mind. ■

Trula M. LaCalle, PhD, is an employee relations and cross-cultural consultant and trainer living in Sonoma County. Dr. LaCalle is a non-Hispanic who has 25 years' experience working and living with Hispanics. She offers training for winery and vineyard employees, presented in English or Spanish, on topics such as supervision skills, human relations, and productivity. Consultations are available by telephone, or she will travel to your site.

She can be reached at 707/829-9496, 888/LACALLE, or lacalle@metro.net. *For more information and articles, visit her website:* http://www.LaCalle.com.

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Neutral barrel products: Traditional Barrel Inserts (twice new barrel extraction) are cooper-installed through the head. Barrel Oak Replicas (new barrel extraction) consist of 10 three-stave sections inserted through the bung-hole. Both inserts are quality solutions, extending the life of your barrels.

Barrels: StaVin also represents traditional cooperages, two-year seasoned Tonnellerie Berthomieu and Bernard French barrels, and Kelvin Cooperage American barrels.

For more information, contact:
StaVin
Alan Sullivan, Stephen Sullivan, Dr. Jeff McCord, or Jamie Zank
PO Box 1693, Sausalito, CA 94966-1693
tel: 415/331-7849; fax: 415/331-0516
e-mail: info@stavin.com

PLEASE SEE STAVIN'S AD, PAGE 51.

CHR. HANSEN, INC.

Chr. Hansen, Inc., a leading producer of malolactic bacteria cultures for wine, has decided to enter the yeast business.

Chr. Hansen's main approach in this yeast project is to offer yeast with good synergy to malolactic bacteria. Many comprehensive studies have been done by Chr. Hansen on the interactions between yeast and bacteria. One focus of the studies was to find new yeast strains with very low SO_2 and nitrogen requirements so that conditions after the alcoholic fermentation are improved, in comparison to other commercial yeast.

Two new Chr. Hansen yeast strains will be introduced to the U.S. market this year; CH001 and CH003. Besides their good synergy to malolactic bacteria, the new yeast strains have excellent organoleptic impact on wine. CH001 is a specially selected yeast for Cabernet Sauvignon and other spicy varieties. CH003 is a perfect strain for complex and high glycerol red varieties such as Zinfandel, Syrah, and Pinot Noir.

In addition to the two new yeast strains, Chr. Hansen offers its new malolactic strain, Viniflora CH35, which won a technical award at the 2000 SiteVinitech in Bordeaux. This strain is suited for white and rosé wines and respects the fruity character of the variety. An additional property of this strain is the ability to conduct malolactic fermentations in difficult wines in which other cultures can't perform malolactic fermentation.

All of these products will be available for the 2001 harvest.

For more information, contact:
Chr. Hansen, Inc.
Annamarie Kyne
9015 W Maple St.
Milwaukee, WI 53214-0735
tel: 415/485-1870; fax: 415/485-0735
e-mail: ahk@chr-hansen-us.com
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GUSMER*CELLULO* COMPANY

Gusmer*Cellulo* Company has worked with the wine industry and offers all Chr. Hansen bacteria and nutrients, which are the preferred malolactic fermentation aids of many of the world's most successful winemakers.

If you seek fast and effective malolactic fermentations, then take advantage of the benefits of Viniflora Oenos and Viniflora CH35. These freeze-dried cultures, containing *Oenococcus Oeni* (leuconostoc oenos), are strong enough to ensure stable, and more important, reliable malolactic fermentations in both red and white wines. What makes them even more appealing is their simple and practical application — simply pour the culture directly into the wine and let nature take its course! Bactiv-Aid, a nutritional supplement developed specifically for ML bacteria, is also available.

Gusmer*Cellulo* offers the latest in winemaking enzyme technology from Novozymes, a world leader in enzyme applications, including the well-regarded Vinozyme G enzyme for premium red wine production, available throughout the season. **Gusmer***Cellulo* distributes Red Star yeast and Red Star yeast nutrients.

Service with knowledge makes **Gusmer***Cellulo* the perfect choice for winemakers.

For more information, contact:
Gusmer*Cellulo* Company
West Coast:
81 "M" St., Fresno, CA 93721
tel: 559/485-2692; fax: 559/485-4254
East Coast:
1165 Globe Ave., Mountainside, NJ 07092
tel: 908/301-1811; fax: 908/301-1812
e-mail: sales@gusmercellulo.com
website: www.gusmercellulo.com
PLEASE SEE GUSMERCELLULO'S AD, PAGE 73.

INNERSTAVE LLC

"Shaping the taste of fine wines" has been the most fulfilling activity at Innerstave for over 20 years. Innerstave, the originator of the barrel insert, reduces costs for oak barrel flavors.

Winemakers appreciate Innerstave because of its non-invasive, no welding, cleanable design. Little effort is required of cellar staff because Innerstave is installed for free by its own qualified coopers.

Innerstave's coopers also provide quality barrel consultation and repair and its sales staff has many creative solutions for barrel and tank problems.

Innerstave's highest acclaim is for its award-winning flavors found in wines of all price ranges, including ultra premiums.

The supply of on-site, air-dried French, American, and Oregon oaks ensures availability of high-quality, prepared oak for every order. Winemakers can use Innerstave to manage and control wine-to-wood ratios, oak type, and toast levels. Most find that using Innerstave allows them to reduce winemaking variables and better predict finished wine flavors, and the use of Innerstave at any time during the wine's life gives the winemaker better control of the wine's character.

Innerstave's oak chips, called "OakPLUS," have been a flavor benchmark for oak chips used in wineries. The low-dose, high-flavor impact of these chips makes them one of the most requested chips in the industry and very cost-effective.

For winery friends who have small lots of wine or are far away from Innerstave's home in Sonoma, CA, Innerstave invented Chain O' Oak, a self-install alternative to new barrel Innerstave.

Innerstave guarantees satisfaction in everything it does!

For more information, contact:
Innerstave, LLC
Bob Rogers
24200 Arnold Dr., Sonoma, CA 95476
tel: 707/996-8781; fax: 707/996-1157
e-mail: bob@innerstave.com
PLEASE SEE INNERSTAVE'S ADS, PAGES 7, 36.

KLR MACHINES, INC.

KLR Machines, Inc., represents Begerow Co., which produces the BECO line of filtration and fining products. BECO filter products are used by many wineries throughout the U.S. More than 30 years of research and practical experience are reflected in the quality and performance of BECO products.

BECOFLOC's mechanically fibrillated structure, combined with its adsorbent quality, allows BECOFLOC to be more efficient in removing ultrafine turbidities and colloids than cellulose fibers, perlite, or diatomaceous earth. When added to other filter aids, BECOFLOC will improve their filtration efficiency.

BECO filter sheets are available in various micron retentions (nominal), allowing the winemaker to achieve desired results. BECO filter sheets are used for coarse clarification up to sterile filtration prior to bottling. The matrix of BECO filter sheets allows for a gentle filtering action which guarantees that valuable wine characteristics are not lost.

BECO SIHA isinglass is a natural fining agent produced from fish bladders and sold in the form of dried sheets. In wine, isinglass has a very strong positive charge which acts to adsorb and flocculate negatively-charged colloidal materials.

Begerow offers a complete line of yeast and other products used in wine treatment. Please contact KLR for your specific requirements.

For more information, contact:
KLR Machines
350 Morris St. Suite E, Sebastopol, CA, 95472
tel: 707/823-2883; fax: 707/823-6954 or
47 West Steuben St., Bath, NY 14810
tel: 607/776-4193; fax: 607/776-9044
PLEASE SEE KLR MACHINES' AD, PAGE 25.

LALLEMAND

Lallemand now produces over 180 different yeast and malolactic bacteria strains for the international winemaking community. Over 25 years of expertise in winemaking fermentation research and development linked with listening to what winemakers want from fermentation products have helped contribute to Lallemand's success as a market leader. Lallemand's commitment to continually research and develop the best fermentation products for winemaking continues to be its primary goal.

Yeast — This year's new yeasts include the BA11 isolate which exhibits excellent fermentation properties and high sensory impact especially in mouth-feel volume and aroma intensity of different white varietals.

Bacteria — With the success of Lallemand's MBR 31 and ALPHA malolactic bacteria direct inoculation cultures over several vintages, many internationally respected winemakers consider them their preferred malolactic starter cultures due to their positive sensory and fermentation kinetics properties. Although standard freeze-dried malolactic bacteria cultures require build-up at the winery, they remain popular due to their excellent activity in very difficult wines.

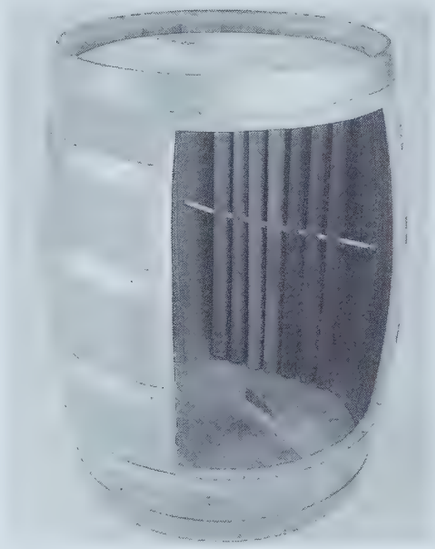
Nutrients — A wide range of fermentation nutrients, including Fermaid K are produced by Lallemand. Please call Lallemand and the staff will help you choose the best fermentation tools suited to your stylistic goals.

For more information, contact:

Lallemand
Gordon Specht
PO Box 5512, Petaluma, CA 94955
tel: 707/526-9809; fax: 707/526-9803
e-mail: gspecht@lallemand.com

PLEASE SEE LALLEMAND'S AD, PAGE 83.

WORLD COOPERAGE



World Cooperage offers alternatives to investing in new oak barrels. These cost-effective products, available in air-dried, fire-toasted French, Balkan, American, and Chestnut oak, impart refinement and flavor of oak to your wine.

Tank Staves: World Cooperage designed its oak stave systems to practically fall into place, without special containers or equipment. You can also choose the configuration that's best for your production: cube, triangle or hexagon, positioned horizontally or vertically.

Barrel Renewal Systems: World Cooperage has made its barrel inserts both easy and affordable. World Cooperage's quick-install, side-wall design gives your existing barrels abundant new oak, yet it doesn't interfere with stirring, fermenting, and other winemaking techniques.

Oak Chips: Oak chips can be a flexible cost-effective way to add elegant oak flavors to your wine. World Cooperage carefully sizes and toasts its chips for different fermentation and aging processes.

Oak Powder: New in 2000, this product has launched with success due to ease of use and impact during fermentation.

As a greater service to you, Bill Munroe is World Cooperage's full-time barrel alternative specialist. His in-depth understanding of these products and their application will help you find the product that best fits your winemaking.

For more information, contact:

World Cooperage
Bill Munroe
2557 Napa Valley Corp. Dr., Suite D
Napa, CA 94558
tel: 707/255-5900; fax: 707/255-5952
website: www.cooperage.com

PLEASE SEE WORLD COOPERAGE ADS, PAGES 2, 41, 52, 94.

PICKERING WINERY SUPPLY

Pickering Winery Supply distributes a special potassium caseinate, Vinpur Special, from Meggle of Germany.

Casein has long been recognized in Burgundy and Australia as an effective, gentle way of removing bitterness, brown pigments, and oxidized phenols in red and white wines. But while many winemakers in the U.S. have tried it, even more have been put off by the difficulty of the agent's application.

Now, by using cellulose as a carrier, Meggle has solved this problem with a product that can be directly dispersed in your wine. This means that casein's excellent characteristics in the lab can be easily reproduced in the winery; a predictability that allows you to selectively target different components in your wine.

Most wineries that have tried it now look upon Vinpur-Special as more than just a problem solver: it has become an integral part of their winemaking process.

For more information, contact:

Pickering Winery Supply
John Pickering
888 Post St., San Francisco, CA 94109
tel: 415/474-1588; fax: 415/474-1617

PLEASE SEE PICKERING WINERY SUPPLY'S AD, PAGE 65.

SCOTT LABORATORIES, INC.

Scott Laboratories and Laffort Oenologie continue to bring new products to the wine industry through an ongoing partnership. Two such products are now available to keep winemakers on the cutting edge of this global industry.

Oenosteryl Effervescent tablets are a safe and convenient way to add potassium metabisulphite to barrels or tanks. The tablets, a combination of metabisulphite and potassium bicarbonate, allow the winemaker to add a pre-measured amount of SO_2 that will be evenly distributed and homogenized. The precise dosage and easy handling make these tablets particularly useful for post-fermentation SO_2 additions or for barrels in hard to reach locations.

The effervescent properties of the tablets facilitate a good mixing of the SO_2. In puncheons or tanks larger than a 60-gallon barrel, additional stirring or pumping over is necessary. These tablets are available in two convenient dosage levels: two- and five-gram tablets, releasing nine and 22 ppm, respectively, into a 60-gallon barrel.

Tan'Cor is the latest tannin product developed by Laffort for use in wines during tank and barrel aging. Addition of Tan'Cor at either time will enhance the long-term color stability and improve the middle palate structure of wines. Tan'Cor, like VR Supra, is a blend of proanthocyanidic (grape) and ellagic (oak) tannins. Tan'Cor is additionally and specifically processed to be highly polymerized for post-fermentation additions.

Available in one and five kg bags, Tan'Cor easily dissolves in warm tapwater for addition during racking or pumpover.

For more information, contact:
Scott Laboratories, Inc.
PO Box 4559, Petaluma, CA 94955
tel: 707/765-6666; fax: 707/765-6674
Scott Laboratories, Ltd.
1845 Sandstone Manor #14
Pickering, ONT Canada L1W 3X9
tel: 905/839-9463; fax: 905/839-0738

PLEASE SEE SCOTT LABORATORIES' ADS, PAGES 61, 93.

NAPA FERMENTATION SUPPLIES

Napa Fermentation Supplies offers a complete line of Lalvin fermentation supplies including 22 strains of wine yeast. The yeasts available are Lalvin BM45, Lalvin S6U, Lalvin D254, Lalvin CY3079, Lalvin RA17, Lalvin T73, Lalvin R2, Lalvin Zymalfore VL1, Lalvin EC1118 Prise de Mousse, Lalvin 71B, Lalvin K1, Lalvin L2056, Lalvin Wadenswil 27, Montrachet Davis 522, Champagne Davis 595, Uvaferm PM (Prise de Mousse), Uvaferm CEG (Epernay 11), Uvaferm Steinberger, Lalvin RC212, VL3, F-10, and F-5.

Malolactic cultures include X-3, OSU, Inobactor, and MT01. Yeast nutrients are Fermaid K and Fermaid 2133.

Additionally, Napa Fermentation Supplies carries a full line of winemaking equipment and supplies, including labware, refractometers, wine thieves, rubber stoppers, fermentation locks, and chemicals.

For more information, contact:
Napa Fermentation Supplies
575 Third St., Bldg. A
(Inside the Napa Town & Country Fairgrounds)
Napa, CA 94581
tel: 707/255-6372; fax: 707/255-6462

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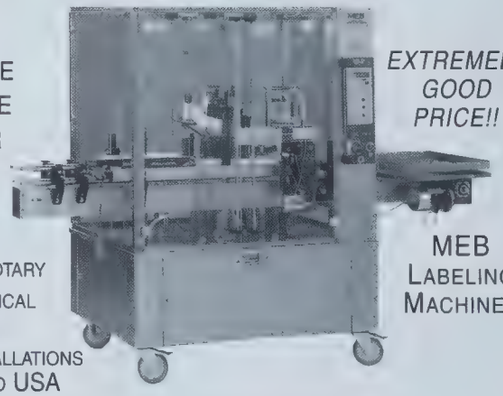
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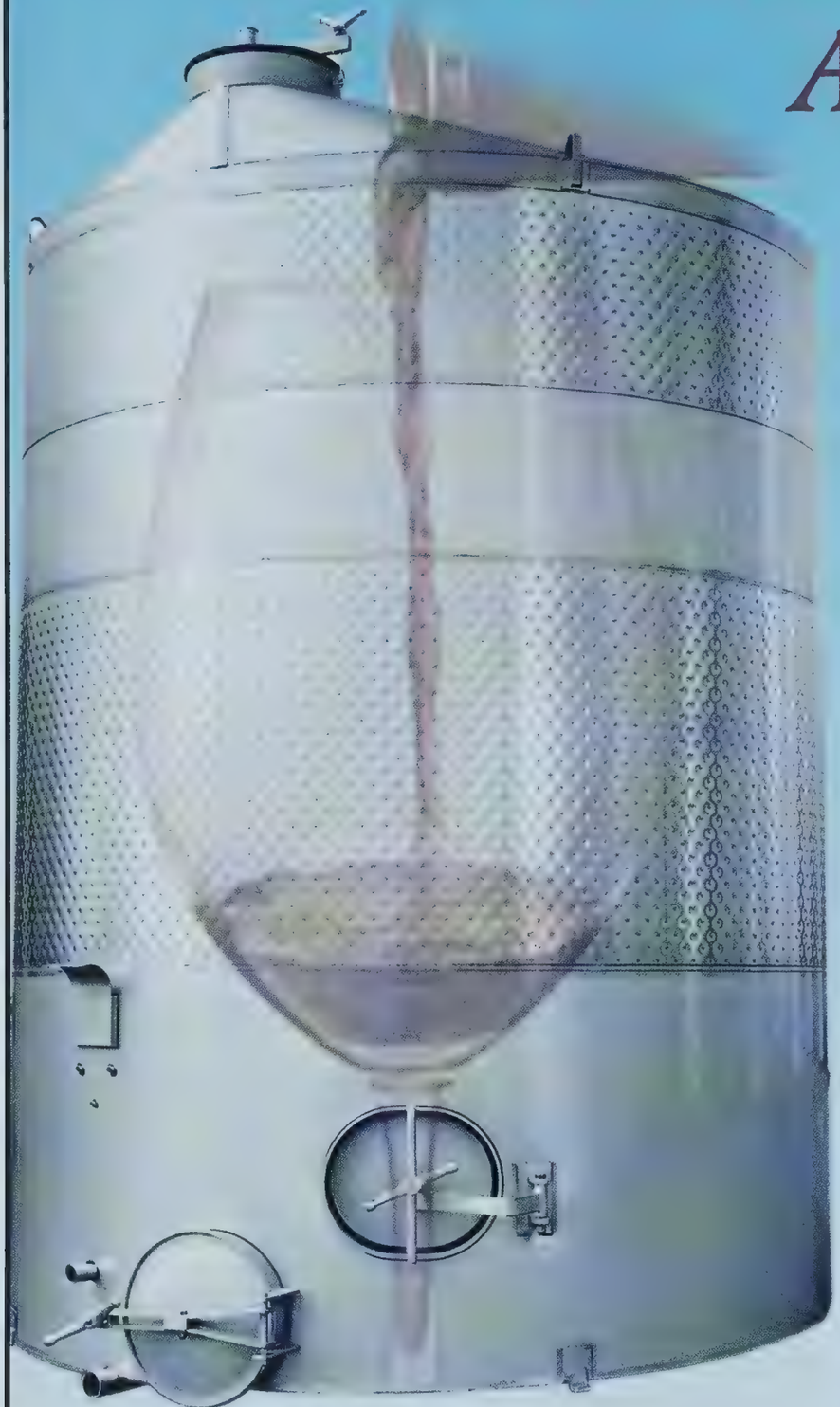

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VINQUIRY

Vinquiry offers a range of fermentation products for winemaking. Clients select from over 35 yeast isolates to make suitable matches for fermentation, considering grape variety, nutrient status, desired aroma and flavor profiles, and wine style. Experienced, knowledgeable staff can assist with yeast and nutrient recommendations to optimize fermentation conditions for wine quality and to avoid stuck fermentations.

Vinquiry is exclusive U.S. distributor for the ENOFERM line of specialty yeast developed by Dr. Paul Monk and produced by Lallemand. Additional Lallemand active dry yeasts and a collection of yeasts on slants are available.

Several malolactic bacteria selections, including the MCW strain — which was isolated and developed by Vinquiry — are available. Direct addition cultures include Enoferm Alpha, Enoferm D, and Enoferm proVino.

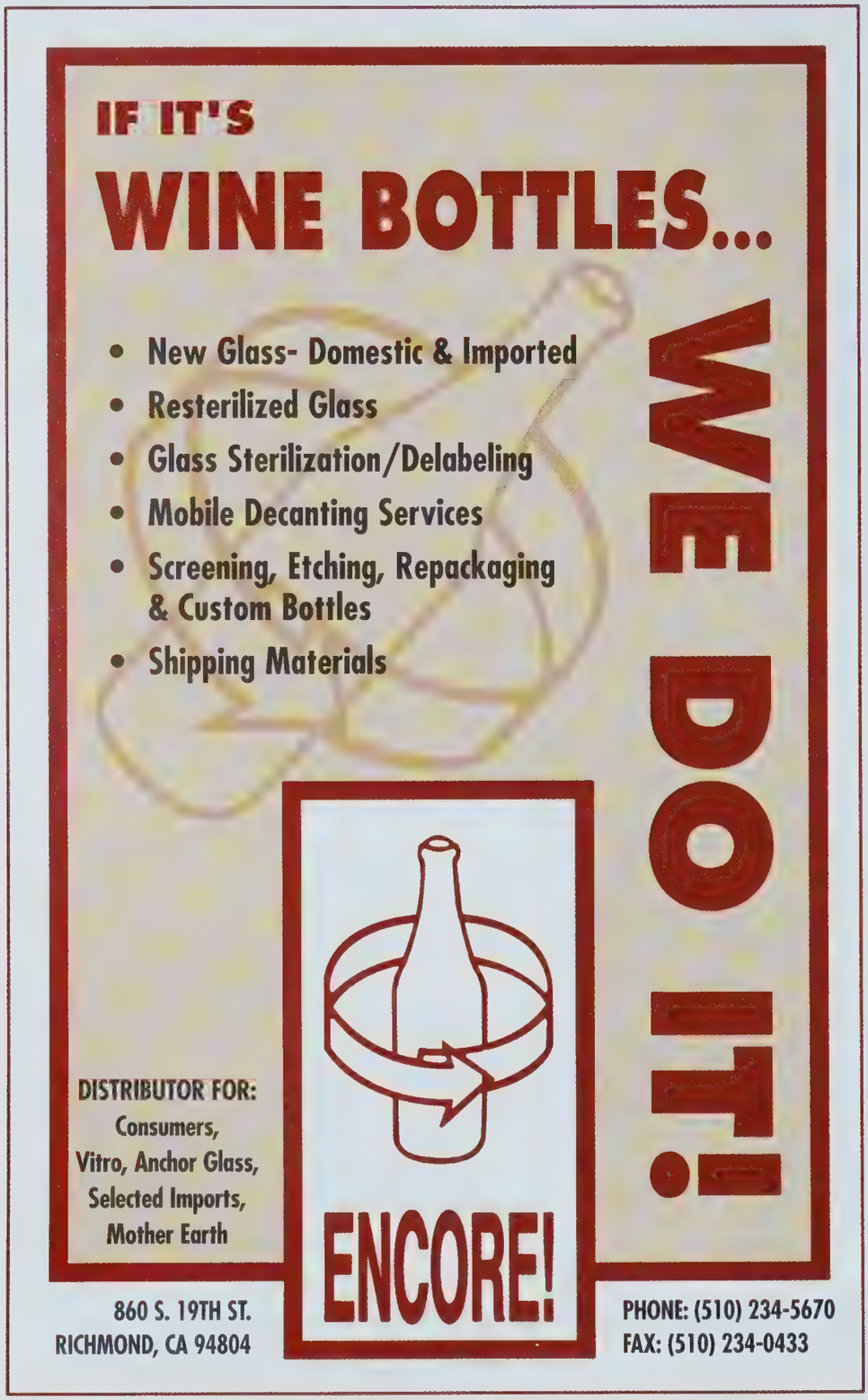
Vinquiry's nutrient products, supported by laboratory testing to determine nutrient needs, include: Fermaid, Cerevit, diammonium phosphate, Oenovit, yeast autolysate, hulls, and both dry and pourable extracts. To optimize red wine fermentations, Lallzyme EX enhances color stability and mouthfeel by optimizing condensed tannin extraction during maceration.

Vinquiry offers carefully selected products from the Martin Vialatte line for premium wine production: Tannins Oenotan; Tanichene; and Vitanil AS, B, and VR for red or white wine applications.

Fining agents include: Gelatin Extra, Gelisol, Albuminocol, Solugel, Cristaline, Miracol, Ovocol (atomized dry or pasteurized fresh), and Polycase.

Filtrostabil brand of purified gum arabic and timed nutrient products Actiferm 1 and 2 are available. Efferbaktol, SO_2 in easy-to-use tablet form, is available in three application sizes.

For more information, contact:
Vinquiry
7795 Bell Rd., Windsor, CA 95492
tel: 707/838-6312; fax: 707/838-1765
PLEASE SEE VINQUIRY'S AD, PAGE 32.



THE WINE LAB

Products available from The Wine Lab include: Red Star and GB yeasts, Viniflora™ oenos and CH-35 ML cultures, fermentation aids (Superfood, Leucofood, Vitamix, Leucovit); enzymes (GB Rapidase Ex-Color, CX, AR2000, Lysozyme); lab and cellar chemicals and supplies.

Services provided by The Wine Lab include: chemical and microbiological analysis; consultation, problem-solving, and wine quality improvement

The Wine Lab provides technology transfer in seminars, training sessions, technical books, and informational literature.

What's new at The Wine Lab?

Expansion: Chile has been added to The Wine Lab's global affiliations through Vinotec S.A., providing international technology and a wide range of products.

Nutrients: The Wine Lab's proprietary nutrient and vitamin blends are now available in Australia and Chile as well as the U.S. and New Zealand, to help yeast and ML fermentations go smoothly to completion. Testing juice for YAN (ammonia N + NOPA) is highly recommended to calculate supplementation levels.

Stuck ferments: The Wine Lab has worked with thousands of problem fermentations in several countries. Harvest 2000 brought more attacks on fermenting and stuck wines by aggressive *Lactobacilli*, but Inovapure lysozyme shows promise in the prevention and treatment of this problem.

Microbiology: Under Lisa Van de Water's direction, microbial spoilage has always been a specialty of The Wine Lab. Wine microbiology classes, using a new digital photomicroscope, and defect tastings are held periodically. A current project looks at sensory effects of three aromatic products of *Brettanomyces*.

For more information and a free price list, contact:

The Wine Lab
U.S. / Canada
477 Walnut St., Napa, CA 94559
tel: 707/224-7903; fax: 707/255-2019
e-mail: winelab@aol.com
New Zealand
Pacific Rim Oenology Services, Blenheim
tel: (+64-3) 577-9000; fax: (+64-3)577-9001
e-mail: pros@hortresearch.co.nz
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PLEASE SEE THE WINE LAB AD, PAGE 80.

CLASSIFIED ADS

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Cost: $250 for general admission on Wednesday and Thursday; $250 for Wednesday night Visionary Award Dinner. WineVision donor members can send two attendees at $150 per person member rate. Associations and non-profits can pay $150 per association executive.

For more information, please visit the web site: www.winevision.org. For more information on workshops, contact: Waunice Orchid or Kathryn Archer at tel: 707/255-9222; fax: 707/255-2044; email: admin@winevision.org

American Society for Enology & Viticulture Annual Meeting

June 27–30, San Diego Convention Center, San Diego, CA

Wednesday, June 27

Syrah Symposium

ASEV Classic Golf Tournament

Thursday, June 28

Presentation by Merit Award honoree Frederick Jensen, Extension Viticulture Specialist Emeritus of University of California, an authority on table grape production and a pioneer in integrated pest management. He conducted research on wine, raisin, and table grape production.

1:00–3:30 PM: Wine Technology

1:00–5 PM: Pest Management

3:30–5 PM: TPC Lab Proficiency Update

Friday, June 29

8:00–11:30 AM: Wine Composition and Analysis

8:30–11:30 AM: Vine Physiology

9:30–5:30 PM: Exhibit Hall open

11:30–12:30 PM: Annual Business Meeting

1:30–3:45 PM: Vine Physiology

1:45–3:45 PM: Wine Microbiology

4:00–5:30 PM: Wine Reception in Exhibit Hall

Saturday, June 30

8:00–10:15 AM: Experimental Design Workshop

8:15–10 AM: Vine Physiology

9:30–4 PM: Exhibit Hall open

10:30–11:30 AM: Honorary Research Lecture by Dr. Michael McCarthy from the South Australian Research & Development Institute in Nuriootpa. Dr. McCarthy is actively involved in irrigation management research of wine grapes and is recognized for his work on deficit irrigation and partial rootzone drying in Australia.

12:30–2:30 PM: Exhibit Hall Luncheon

1:30–2:30 PM: Tasting for Experimental Design Workshop

2:30–4 PM: Fermentation Physiology

2:30–4 PM: Plant Pathology

For more information: tel: 530-753-3142; fax: 530-753-3318; webpage: www.asev.org

ASEV Eastern Section Annual Meeting/Symposium

July 11–12, White Oaks Conference Centre & Spa, Niagara-on-the-Lake, Ontario, Canada

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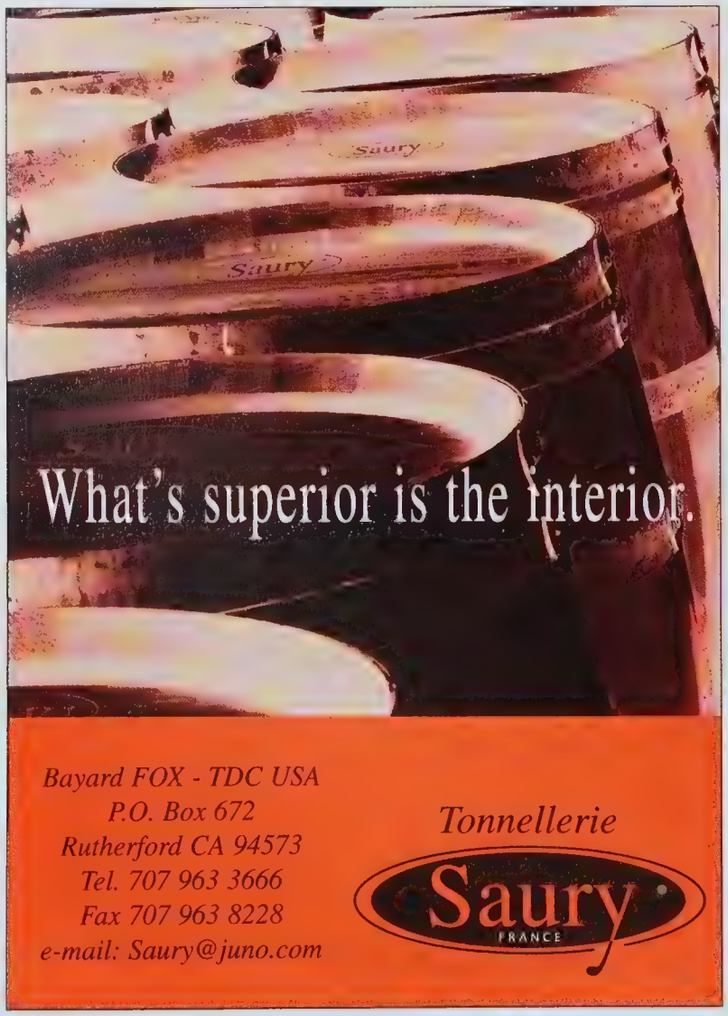

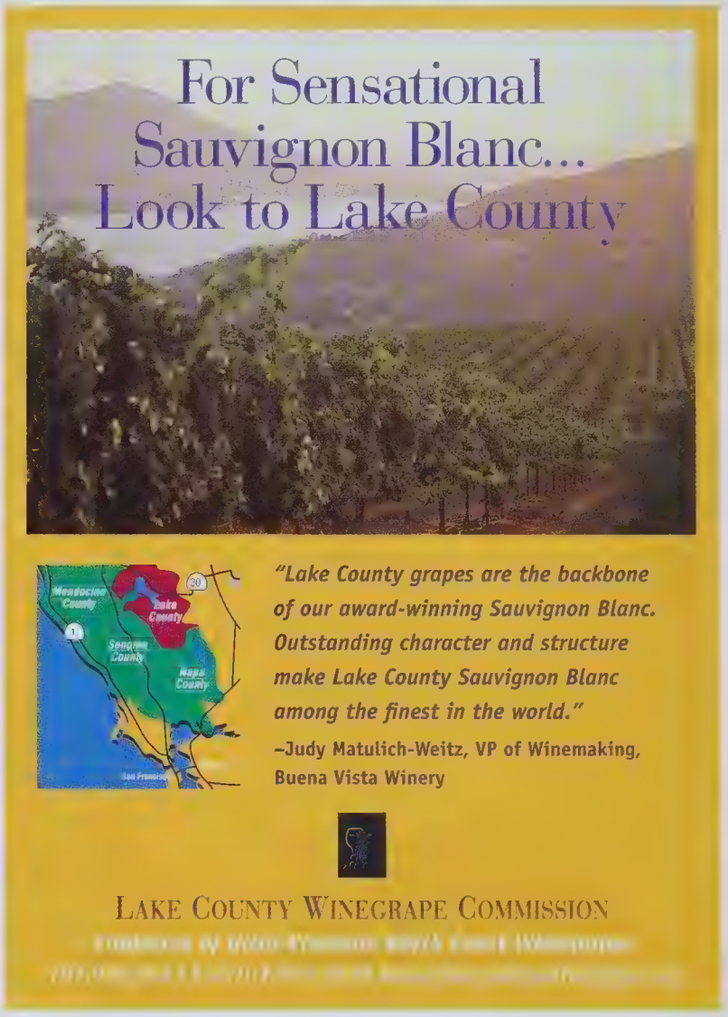
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June 20–22, San Joaquin Valley Field Evaluation of Drip/Micro Systems — Performing entire evaluations on trees/vines in two fields in San Joaquin Valley.

Designer/Manager School of Irrigation

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August 22, Pumps I — Pump curves; pumps in series and parallel; system curves; TDH computations for vertical and booster pumps; efficiency, WHP, BHP, input HP; pump selection from catalogs.

August 23–24, Pumps II — NPSH; submersible pumps; well screens and well development; variable speeds; electric and engine; shaft losses and sizing; maintenance and trouble-shooting.

August 23, Chemigation — Fertilizers; techniques for various irrigation methods; reducing leaching losses; emphasis on drip/micro; injection equipment and safety; features ITRC book *Fertigation*

August 27–29, Drip and Microirrigation — Filtration; step-by-step design procedure of hardware selection and amp; hydraulics; emitter and micro system designs; buried drip for trees and vines; plugging prevention; new ITRC book and software.

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by Sue Weeks

Proficiency testing — Support groups for laboratories

Participation in a proficiency testing program can be a powerful quality assurance tool in any well-run laboratory. In this column, we will discuss what is available, how such programs work, and the benefits and costs of participation.

What is proficiency testing?

Proficiency testing is the analysis of samples in conjunction with other laboratories involved in the testing of the same or similar sample types. The process usually involves analysis of the sample for particular compounds, followed by collation and statistical analysis of the results. In simple terms, proficiency testing allows your laboratory to compare analytical results with other laboratories that have performed analyses on the same samples.

What is available to wine industry laboratories?

There are many programs available to the wine industry. Most offer analysis for a range of beverages that include wine, and they usually offer to test for a limited list of compounds. Others target substances, such as agrochemical residues, for those laboratories that have the facilities and need for such things.

The two programs described below are wine-specific and are run by wine-industry people. One is U.S.-based and the other Australian-based, and they provide very similar services.

ASEV Winery Lab Proficiency Testing program

This program was conceived in 1997 and commenced in 1999. It is the brainchild of the Technical Programs subcommittee of the American Society of Enology & Viticulture (ASEV). The program now has 55 winery participants. There are four rounds per year, and each round offers an opportunity to perform 10 analyses. These are:

- Free SO_2
- Total SO_2
- pH
- Titratable acidity
- Volatile acidity
- Malic acid
- Ethanol
- Residual sugar
- Specific gravity
- Lead

Each laboratory can perform all — or some — of the analyses, depending on the available resources. The results are submitted to Chris Czyryca at Collaborative Testing Services in Herndon, VA.

He analyzes all the data, produces graphs similar to the one on page 87, and sends a report to all participants. He also provides some interpretive information to help participants understand the results and what they might mean to the laboratory. Anonymous results are discussed at ASEV meetings twice each year.

Further information about participation in this program can be obtained from the following web page: wineserver.ucdavis.edu/oldsite/labquality.html at www.society@asev.org, or by contacting Christian Butzke at the University of California, Davis.

Interwinery Analysis Group

The Interwinery Group is an Australian group that commenced formally in 1983 after almost 20 years of informal operations. The group is run by a committee of laboratory staff from wineries in many wine regions of Australia and has 135 members, including several from wine regions in America, France, South Africa and New Zealand. This program offers an opportunity to perform 17 analyses. These are:

- Free SO_2
- Total SO_2
- pH
- Titratable acidity
- Volatile acidity
- Malic acid
- Alcoholic strength
- Residual sugar
- Specific gravity
- Citric acid
- Potassium
- Copper
- Iron
- Sodium
- Calcium
- Carbon dioxide

From time to time, the program also offers "one time only" opportunities for some analyses, such as heat and cold stability testing.

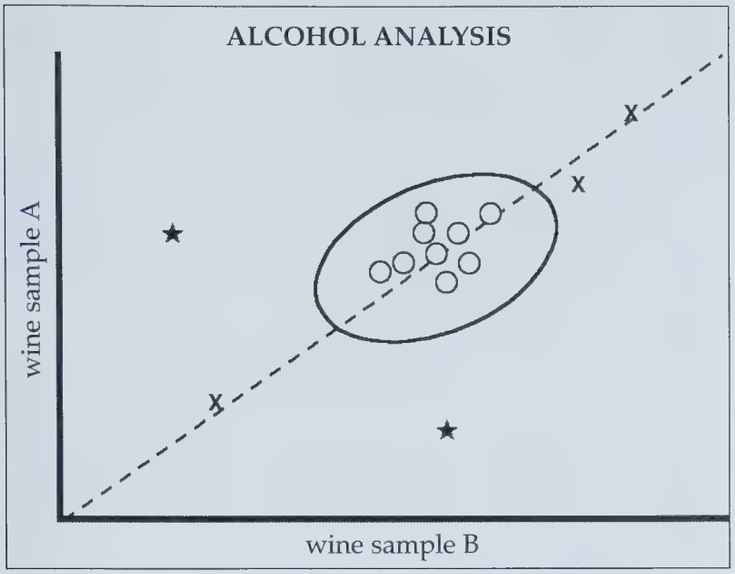
The Interwinery Analysis Group operates in similar fashion to the ASEV program in that samples are sent out to each laboratory for testing, and the results are submitted by fax or email to one location for statistical analysis. The anonymous results are discussed at twice-yearly, one-day seminars that also feature wine laboratory-specific trade displays. Further information about the group and its activities can be obtained from its website at www.interwinery.com.

How do these programs work?

Each participating laboratory receives two wine samples, usually marked A and B. Analysis is performed on the samples, and the results are sent by the laboratory via email or fax to one location. The results are then collated and run through a powerful statistical computer program, which allows complex statistical processes to be interpreted in a very simple graphic format. The process gives the participating laboratories much information about the quality of their results.

Each analysis is graphed in a similar fashion to the one shown below. The A and B results for each sample are plotted one against the other on the x and y axis. Each pair of results forms a dot on the graph that lies within a certain area. The

statistical information also includes a calculation of the mean or average of all the results. This mean is used to calculate the 95% confidence interval or the ellipse that surrounds the accurate results.



The aim of participation is to get all your laboratory results within this "ring" of confidence (where the open circles lie). The more participants in the program, the tighter this confidence interval is.

This graph demonstrates the different areas of the graph where results might fall, along with their interpretation. A result falling within the circle is ideal, while results falling on the 45 degree line but not within the circle indicate a systematic error. Results that fall neither on the 45 degree line nor within the circle are usually random in nature.

O = Ideal

A result in this area means that you have submitted a lab analysis result that lies within the 95% confidence circle (or ellipse in this case) for that analysis. This means that your result is very close to the mean for the whole group.

★ = Random errors

A random error often indicates human error, as one result is usually correct and the other erroneous. This could be due to sample preparation or some sort of oversight during the analysis (*e.g.* not adding a critical reagent). It is usually difficult to determine what happened after the event, and it is therefore important to have systems in place that prevent it from happening in the first instance.

X = Systematic errors

A systematic error indicates that the errors have occurred across multiple analyses and are likely to be 'system' errors. These errors are the most dangerous because analysis of a duplicate sample will give the same result leading to a sense of false security. Standards — and more importantly spikes — are useful in determining the source of these problems, which are usually reagent-, equipment-, method-, or training-based. Spikes are a more useful tool in this instance because sometimes the problem is matrix-related, and analysis of an aqueous standard solution will not always isolate the problem.

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How do you determine where your results are on the graph?

In order to figure out where your result lies in comparison to other analysis results, it is important to review the data with your submitted results in hand. By using the grid on the graph with your results, you can easily determine which symbol your sample represents, whether it be in the O, ★, or X region. (Please note that on the true graphs the symbols are all black dots. The symbols were used in this case to demonstrate and provide interpretative information about the different areas of the graph.)

Positions on the graph are often shared by more than one laboratory, and this is demonstrated by a daisy symbol. The number of petals on the daisy indicate the number of laboratory participants (minus 1) whose results fall in the same place. Several daisies will often be seen inside the 95% confidence interval.

Evaluation of these graphs is critical for participation in proficiency testing. To neglect this task is like failing to get your results after sitting for an exam or having a blood test! The second most important task is to review those analyses that did not provide "good" results and attempt to determine where any deficiencies might lie. A review of the method, some additional standards, duplicates or spikes, and inspection of the equipment and method would be some areas to consider.

Disadvantages of this type of proficiency testing program

While this statistical analysis provides comparative information about the results, it does not provide any information about the absolute accuracy of any one result. Proficiency testing based on accuracy is based on two assumptions.

The first is that one particular laboratory will be accurate in its analysis every time and is therefore classed as a reference laboratory. There are certainly laboratories that are more likely to be accurate, such as those with Quality Accreditation and sophisticated equipment. However, when there are humans involved in the process, there will always be a risk of error.

The second assumption is that the samples submitted to every participant are identical. To make sure that this is indeed the case, exhaustive homogeneity testing would be necessary on several sets of samples. This would make the cost prohibitive for most participants.

Both programs use samples from a regular bottling line production and, for the most part, experience few problems with bottle variation. Sulphur dioxide results on sparkling wines might be one exception. The statistical analysis is somewhat dependant on the sample size, therefore the more participants, the more useful the results.

How much does it cost to participate?

The ASEV Winery Lab Proficiency testing program costs $464 per year for four rounds. This fee includes samples, freight, and result reports.

The Interwinery Analysis Group costs AUD$250 per year for six rounds (at the time of writing this equals approximately USD$130). This fee includes samples, results, and free seminar attendance, but does not include freight to overseas destinations. Freight is usually arranged through FED EX or DHL.

Now that you have all this information about proficiency testing programs, you can take advantage of this wonderful support mechanism for wine industry laboratories. Both programs offer complete confidentiality when results are issued, while at the same time providing a network of industry contacts who can serve as a valuable resource, should you have a problem. Most often, if you have identified a problem with one of your analyses, you can bet that several other wineries have experienced the same problem at some time.

Before you assume that all your quality problems will be solved by joining a proficiency testing program, please remember that proficiency testing is only one powerful tool in a quality system — not the whole toolbox! It is not a substitute for any in-house quality procedures. ■

Next issue: *People power in the winery laboratory.*

Sue Weeks is an Australian wine laboratory consultant. She provides assistance in areas of formal or informal quality system implementation, method validation, and troubleshooting, laboratory setup, personnel selection, and staff training. She also operates an Australian/US wine industry exchange program in conjunction with the Communicating for Agricultural Exchange Program (CAEP), in Fergus Falls, MN. She visits America often and can be contacted through the Bibber International website at www.bibber.com.au or by fax at 618/8358-1676. She can also be contacted through Gordon Burns at ETS Laboratories (St. Helena, CA) at tel: 707/963-4806.

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by D.R. Storm, PhD, P.E.

HIGH-TECH DIRT MANAGEMENT

Proctor & Gamble recently developed a disposable cloth that miraculously bonds to floor, wall, and ceiling detritus for easy disposal. The product apparently [I'm guessing here, since the secret is not revealed by P&G for fear of market imitators] combines a unique fabric structure with a cationic (+) and anionic (–) charge. "Swiffers," as the product is called, won't revolutionize cleaning, but it will certainly make dirt control a lot easier.

The "kit" comes with a three-segment lightweight handle, cloth holder, and a starter package of the magic-fabric soil magnets. Besides its obvious domestic applications, the product could help winery bottling rooms achieve a degree of control over fibreboard case dust, cork dust, and other unwanted sources of dust contamination. Swiffer swipes could be made available at the corking head surfaces and case descrambler tables.

As there is no hydrocarbon solvent or other chemical in the Swiffer cloth matrix, it would appear to be a safe addition to the winery's dirt control arsenal. As the Swiffer advertising copy clearly points out — "Captures stuff instead of pushing it around." Gotta love it!

Standby electrical power for wineries: Cost-benefit ratio improving

Deregulation of electrical power is the *goat of choice* in assessing blame for power shortages and high user costs currently plaguing California. Why no one ever plugged in the rather simple set of parameters into the "What if?" models that were studied prior to the drafting of the de-reg legislation is not for this author to discern. As a matter of fact, the deregulation of the telephone and banking industries cannot be heralded as institutional management victories either.

So why wasn't a simple analytical approach performed prior to the adoption of power deregulation law, similar to the hard questions that are asked during a winery's planning phase? Heads-up winery developers generally prepare a business plan that pits costs against revenues under a series of economic circumstances to determine financial feasibility.

Energy deregulation has been successful in New Jersey and Pennsylvania. Why California adopted flawed deregulation legislation is still being examined by energy regulation analysts to a) fix blame and b) hammer out a new energy production and distribution system that will work.

As newly elected President George Bush replied to California's request for help on its energy crisis — "Your energy law is flawed; you fix it." (He probably also eschewed the cries for help because the Golden State delivered a decisive majority vote to Al Gore.)

As rolling blackouts increase in frequency (and unpopularity) in California, standby power units look more attractive. Of course, energy and other resource conservation programs are an essential part of the power catch-up equation, along with green power alternatives (geothermal steam, photovoltaic cells, tidal power, and hopefully, hydrogen fusion). The fear of a Chernobyl-like disaster in the U.S. has all but banished the nuclear-powered steam electric plant for the foreseeable future.

Clean-burning, natural gas-fueled, conventional steam electric power plants will have to be constructed to satisfy the exponentially increasing demand for electricity that will be necessary as we proceed into the new century for, among other things, driving the e-world without deficiencies.

Meanwhile, wineries are faced with the challenge of how to keep the lights on and tanks at proper temperatures when the power grid falters. This brings us to the discussion of standby or "alternate" sources of electricity generation.

The alternate source is generally an engine-powered electrical generator with onsite fuel supply or battery banks in the case of backup power for elevator operation. The motor generator must be capable of two hours of operation at full-demand loading, while the battery system must operate at full load for 1.5 hours.[1]

For wineries constructed in the last 20 years, standby electrical power generation was seldom considered. The accepted wisdom on feasibility was that long transmission lines to remote areas often were fragile, subject to failure during electrical storms and high winds, and plagued with extreme voltage fluctuations.

Historical power outage records were often checked by this author during the planning phase for a winery proposed for remote locations to decide if an interruptible power source fit into the operation plan. Alternate sources of motive power for fire pumps were site utility systems that could not stand alone with only electric motor power.

Looped systems were generally not electrically or economically feasible for these very linear service lines. Which is a pity, since looping would provide more electrical supply reliability by providing an alternative delivery source when one transmission line is malfunctioning.

Definitions

Wineries can experience problems in requesting that a particular piece of process equipment be connected to an onsite power supply. The laws are quite specific regarding the priorities for emergency power generation.

The National Electric Code (NEC) identifies three categories of standby power:[1]

1) emergency,
2) legally required standby, and
3) optional standby.

The principal criterion for an emergency standby power unit is life safety. Safety concerns **must** be satisfied as a matter of law. Examples include lighting for employees to exit the winery structure safely and a fire alarm system and fire pump that must be activated within 10 seconds of an alarm signal.

Standby power systems (legally required) are next in order of critical equipment functions that must be operative during a blackout or power loss. A good example would be a raw sewage pump station whose inoperability would present a health hazard in the form of surface or groundwater contamination. The NEC gives slightly more leeway in standby power activation, requiring it within 60 seconds of power interruption.

Optional standby loads are for those equipment items that require electrical power, but do not have a life-safety function. Examples would be air conditioning/heater units, freezers, refrigerators, and computers.[2]

There are no NEC guidelines for optional standby loads, but if a winery chooses to include optional equipment for its alternate power setup, electrical compatibility must be respected, as must the discrete separation of electrical conductors for the emergency items that must remain functional after only 10 seconds of power outage.

To that end, NEC even requires that conductors for the emergency components not be in the same conduits as legally required or optional standby circuitry. Clearly stated by the NEC is the separation of emergency system fuses and circuit breakers from the normal electrical source circuits.

Separate transfer switches must also be provided for both optional and legally required standby equipment, **if** the alternate power supply also serves the designated emergency components. The separation logic appears sensible, as the emergency system elements should not be put in jeopardy if a standby piece of equipment should trip a shared circuit breaker and inactivate the entire emergency net.

Wineries that receive a waste discharge permit in California, for example, must have either emergency storage for wastewater or standby power to power the pumps. Uncontrolled overflows to drainage courses are not an option. In other words **it is legally** required but not a life safety issue. If a winery fails to provide an alternate power source for the sewage pump, it would be in legal violation of its waste discharge permit.

Permitting

There are air quality considerations that also must be taken into account when combustion engine-driven standby generators are installed. California will be used as the illustrative example, although all states must have model air quality regulations that meet or exceed the federal Clean Air Act regarding standby power systems.

The 35 Air Quality Districts in California all have their own sets of rules regarding the issuance of permits for standby electric generator systems. Though similar, they differ in the ambient air quality objectives for each of the air basins they represent. It is basically a three-step process that provides (a) the District the opportunity to review the engine manufacturer's exhaust performance specifications; (b) a field check of the installation; and (c) an option to observe start-up and test.

Uninterruptible Power Supplies (UPS)

Principally used for critical computer-based networks, UPS systems are similar to the battery-bank standby systems described previously for publically-accessed elevators. In addition, the UPS systems can be equipped to suppress voltage surges that could damage sensitive computer equipment.[2] ■

David Storm is a civil/sanitary engineer specializing in winery utility systems. He is also the owner of Winters Winery and the author of the reference book Winery Utility Systems: Planning, Design and Operation, *December 1996, Aspen Books.*

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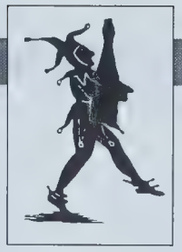

Simple pleasures

Life is good.

That's what Jake was thinking as he sat on a secret beach in Mexico. Days filled with warm temperatures, crystal clear oceans, and decent surf. Fresh fish, just minutes from the sea, making each meal better than the last.

Speaking Spanish from sunrise to sunset was rapidly improving Jake's vocabulary, and devouring a book a day was feeding his mind. Glorious sunshine and the echo of pounding surf soaked into Jake's memory banks, cleansing his mind of stress and opening pathways to new visions.

Poverty is a harsh taskmaster, but it does not always overwhelm the human spirit. Our friend Miguel has invited us to his home where we dine on simple but spectacular tamales prepared by his wife on a wood-burning stove. The *masa* is ground by hand, the *moles* prepared at home, the green tamales wrapped in corn husks, the *mole negro* tamales in banana leaves.

Miguel explains that in Mexico fresh milk is delivered to his house three times each week. Hand-made tortillas are delivered daily. He purchases his meats from a neighborhood butcher who slaughters the animals himself after purchasing them from local growers. There are no feed lots, no chemicals, no growth enhancers, no mad cow's disease.

Chiles, tomatoes, tomatillos, and cilantro all come from the home garden. Papayas, mangos, and coconuts grow on nearby trees. Electricity works, and it doesn't cost as much as a bottle of Chateau Yquem.

Jake Lorenzo wonders, "What more do you need?"

* * *

Life is good.

That's what Jake was thinking as he drove through Sonoma Valley on a sparkling spring day. Miss Catherine the Whole and the Monsieur himself were in the car, along with Jakelyn's mother; four best friends on their way to see a movie.

We walk into the theater and take seats after Jakelyn's mother and Miss Catherine hoist their popcorns down the aisle. The lights dim and we are transported to the wonderfully whimsical world that springs from the twisted minds of the Coen brothers. Oh, brother, what a movie. Gorgeously filmed in a 1937 sepia. Brilliantly acted until the aching poverty of the characters pulsates into your heart. Continuously surprising and inventive until you have to catch your breath at the sheer audacity of it. And the whole thing carried by a soundtrack so deep into Americana that it raises memories we didn't even know we had.

At one point, while the characters sit in a movie theater, which, by the way, mirrors what we were doing at the time, a character whispers, "Do ... not ... seek ... the ... treasure, it ... is ... an ... ambush."

To which another character replies, "We ... thought ... you ... was ... a ... toad."

"They don't write them like that anymore," says Jake Lorenzo, as we return through Kenwood, the highway clogged with limos jockeying for places among the throngs flooding to the Heart of the Valley Barrel Tasting.

Miss Catherine and Jakelyn's mother take turns giggling as they remember various scenes and lines from the movie, as accountants gleefully count the money clanging into winery cash registers.

* * *

Life is good.

That's what winery owners say while they build their ever more ostentatious palaces and raise, yet again, their astronomical prices and look down on the flatlanders waiting for the golden calf to come in.

For them, success is selling the family business to some corporate entity for sixteen million, or thirty-nine million, or forty-five million, or roughly the equivalent salary of a mid-range, banjo hitting second baseman.

"Do ... not ... seek ... the ... treasure, it ... is ... an ... ambush," advises Jake Lorenzo.

"We ... thought ... you ... was ... a ... toad" explains it all.

But a kiss of gentle hospitality, a simple shared home cooked meal, a good book on a sandy beach — these things can always turn a frog into a prince. ■

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SMART VITICULTURE

by Dr. Richard Smart

Training vines for profit

This column will discuss the training of young vines. In my experience this is a critical operation, yet poorly researched and understood. It is also an area of viticulture where *old wives' tales* predominate. I have often heard well-read and experienced people giving advice about vine training, using guidelines that are guaranteed to lose the grower money with no advantage to vine health, as is purported.

I believe that, in many warm-to-hot grapegrowing regions, it is possible to produce crops of one to four tons per acre in the second leaf (growing season), with full crops in the third year. To find out how, read on.

The critical first leaf (growing season)

I assume the vineyard site is well-prepared, and all appropriate soil work like ripping, fertilizing, cultivating, and hilling-up has been done. I also assume that irrigation and trellis posts are installed.

Now, where to place the wires? I suggest using two only, one for the dripper and one for the future top foliage wire. Unless you need to put in a fruiting (cordon) wire to hold a vine-training sleeve, you do not need it for vine training *per se*. The top fruiting wire is enough for the first growing season.

Connect the vine to the top wire with a piece of string or a narrow stake like steel or bamboo. The vine will be trained up this object.

There are a few maxims to follow. The first is ***plant early***. Presuming dormant bench grafts are used, these should be planted as early as possible in spring. If growing vines are planted in late spring, then still plant these as early as possible. ***Plant only healthy, strong young vines***. Do not use any young vines that have been rejected by someone else. Ensure that they are free from diseases like *black goo.*

As soon as shoots are about two to three inches long, thin back to one shoot. Doing this will ensure that it grows more quickly.

Give the young vines adequate water and nitrogen. This will also ensure that they grow quickly. ***Control weeds*** for the same reason.

Occasional passes through the vineyard will be required to train the vine upward. It will need to be tied on only one or two times during its upward growth. Do not forget that vines climb automatically, and they have their own grappling/climbing devices, called *tendrils*. So convenient!

Do not remove leaves. There is a temptation in California and elsewhere to remove leaves and lateral shoots on the main stem. Resist the temptation — **this is viticultural suicide**! ***The aim is to grow as many mature, healthy leaves as possible in the first two growing seasons***. If laterals grow strongly (which is uncommon because the shoot tip growing upward normally suppresses them) then only **tip** them; do not remove leaves.

Do not pinch out the growing tip. It will take the vine weeks to recover. You will be training initially to a unilateral cordon, as I will explain below.

The vines should reach the top wire, normally at around 5.5 to 6.0 feet by about the end of June or July, depending on temperature and soil conditions. Just let the vine keep growing. By the end of the growing season it will be up to about 10 feet or longer. It will normally start to grow along the wire, but let it go where it will. Do not worry about it now.

Stop shoot growth late in the season. Normally this is done by easing back on the nitrogen, the last application being the end of July. Then ease back on water at the end of September, so that there are no more actively growing shoot tips by mid-October. It is important to start wood maturing in early fall.

Keep the leaves healthy as long as possible. Do not stop fungicide sprays.

The first winter

You will now need to install the fruit (cordon) wire if you have not already done so. Avoid all temptations (and advice!) to cut off this lovely cane growth. Some people are so naïve as to cut strong vines back to two buds, with the mistaken idea of "making the roots grow strongly." This viewpoint is as ridiculous as the notion of cutting off a baby's arms to make its legs grow longer!

Rather, prune to a minimum of pencil-size wood or thicker. Hold the future trunk straight to the wire, then ***loosely wrap the cut cane on the wire***. Do not wrap too tightly! Only one wrap per two feet or more, then tie the end. Provided the vines have grown strongly, there will be around 10 to 15 buds on the wire. If the cane has grown very strongly, you can leave more, but I suggest 25 as a maximum. Wire fill should be around 30% to 100%, with 50% being a good average figure suggesting adequate growth in the first year.

Good bud break the following spring is essential. This can be compromised by leaving too many buds on weak growth. If lateral shoots have grown strongly and are more than ¼-inch in diameter, they can be pruned to one or two buds.

If canes are less than three feet long and are thin and spindly, you can cut back to two buds. But you should be asking yourself why the vines grew so poorly! Is the vineyard manager or nurseryman to blame?

The second leaf (growing season)

Get ready for some crop this year, provided the vines grew well in the first year. There is a possibility of over-cropping, which can be easily recognized and avoided.

Hopefully there will be good bud break. This is a given if wood matured well the previous fall and the vines have not been pruned to too many buds. The young shoots should grow vigorously, at the same rate they do on mature vines.

If vines are being trained to the Smart-Dyson system, then remember the shoots should be trained upward and downward in this growing season. The separation into upward- and downward-growing shoots will take place just before bloom. The critical timing of shoot positioning of the Scott Henry system is described in *Sunlight into Wine*, see Section Five: "Scott Henry Trellis."

A Syrah vineyard trained the Smart way, Donnafugata, Sicily (January, 2001).

Bloom and early fruit set are also the times when a decision needs to be made about crop thinning. ***Bunch thinning needs to be done only if shoots have stopped growing by bloom***. This is a sign that there are too many shoots for the root reserves to support.

Shoot growth does not become self-supporting until about bloom, since that is when there is sufficient mature leaf area. If shoots stop growing, it is a sign that they have insufficient leaf area to ripen a full crop, so one bunch per shoot can be removed, preferably at fruit set. Within a week or so, shoot growth should recommence. If bunches are slow to go into veraison, some more thinning will be necessary.

If shoot growth doesn't slow around bloom, leave all of the crop on. It will ripen at the same time as for mature vines, and contrary to opinion in some quarters, make very good wine. This is typically because fruit and leaves are well exposed, and there is a good leaf-to-fruit ratio.

By the end of the season, there should be considerable amounts of well-ripened wood. Again, maintain leaf health as long as possible.

The vine trained along the cordon. Note loose wrapping, and the end is yet to be tied. Donnafugata, Sicily (January, 2001).

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Pruning in the second winter

The vines can be pruned normally in the second winter and if the cordon wire was not filled the previous year, it can be this year with cane extensions. You can begin using pruning weights as a guide to how many buds to leave, as outlined in *The Golden Rules of Viticulture* (see *PWV* September/October 1993). You can anticipate pruning to almost full bud numbers and harvesting an almost full crop in the third leaf.

Conclusion

Many people will tell you that cropping young vines will harm them. This is nonsense, resulting in the stunting of young vines by excessive pruning. It will also dramatically reduce grapegrowers' income. Ignore this advice. Only thin unhealthy, poorly growing vines need to be cut back to two buds. The best time to bunch thin strong young vines is at harvest, when you can sell the fruit!

A future column will discuss unilateral versus bilateral cordons and a more revolutionary concept of unequal vine spacing. Stay tuned to increase profits, grapegrowers and winemakers alike! ■

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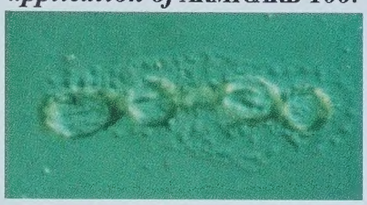

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